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ABSTRACT

The 302 reports of reading research summarized here were published between July 1, 1971, and June 30, 1972. The research has been categorized under six headings. The first category includes other summaries of research, classified as general or under specific titles. The second category consists of research literature related to teacher preparation and practice. Category three, on the sociology of reading, includes such topics as the content analysis of various reading materials, the effect of reading, and the use of mass media. The fourth category contains research related to language and reading, visual perception and reading, and socio-cultural factors and reading. Category five, on the teaching of reading, has all instruction-related studies from those concerned with preschool reading to college and adult reading. The final category encompasses all research reporting on the reading of atypical learners, such as the visually or auditorially disabled. (Author/RB)

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Summary of investigations relating to reading, July 1, 1971, to June 30, 1972

SAMUEL WEINTRAUB, HELEN M. ROBINSON, HELEN K. SMITH, GUS P. PLESSAS

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The Annual Summary: *a case study*

For almost 50 years this annual summary of investigations in reading has appeared in a nationally or internationally distributed journal. This year's summary, containing more than 300 items in its bibliography, again makes available, in a well organized and brief format, a running record of studies in the area of reading published during the preceding year.

In this year's summary, four of the six major divisions are subdivided into from nine to seventeen related topics. As in previous years, the sections on Sociology of Reading, Physiology and Psychology of Reading, and the Teaching of Reading constitute the bulk of the report. However, for some unexplained reason—as the authors point out—the number of studies categorized as belonging in the area of the Teaching of Reading is smaller in this summary and in the one published last year than has been the case in previous years. Could the *Targeted Research and Development Program in Reading* be an influencing factor? Project 2—the Literature Search—emphasized language development, learning to read, and the reading process, with attention being turned away from the actual teaching of reading. Certainly the emphasis on language, linguistics, and learning and on their relationship to reading has received major attention in the past several years. Another factor might well be that support for methods studies and for public school research is no longer readily available.

These summaries assist busy persons in reading in locating studies and in keeping abreast of trends in reading research. Although modern computer searches can be made to locate and abstract research articles from some collections, most of us cannot avail ourselves of these services with as much ease and with as little expense as we can turn to the annual summary which is compiled specifically for our needs and is a ready reference. Furthermore, trends are not highlighted by computer printouts unless the user of the printouts spends considerable time in interpreting them.

The annual summary is for me a valuable teaching aid. Twice each year I teach a course entitled "Critique of Reading Literature" to advanced graduate students in reading. As a course requirement, students study the annual summary carefully and compare it with several other summaries that are published periodically. Students observe closely the accuracy of reporting of studies, the appropriate-

ness of the studies for the particular subsection in which they are reported, and the adequacy of the amount of information supplied.

Each student studies the entire summary. The review is then divided into as many parts as there are students in the class, with each student taking responsibility for an in-depth study of one of the parts. On the part assigned to him, the student selects one or more of the investigations included and then studies the original report. A class session is devoted to a discussion of the summary. Each student reports the most important ideas in his assigned section and then refers more specifically to those studies on which he has checked. A class of 10 or 12 students will follow up on a substantial number of the original studies and by pooling their reactions will have a sound basis for judging how well the reports are done.

Thus, for the students, the annual summary becomes a two-edged learning tool: one through which they become acquainted with the broad spectrum of published research and one through which they sharpen their critical reading and evaluative tools. The latter includes the development of a critical approach to research methods and design. In addition, this type of review leads students into an identification of the many journals in the fields in which reading-related research is likely to appear.

Students also are asked to determine the reader audience for which the RRQ summary is best suited. Invariably they conclude that it is most valuable to the person who knows a good deal about reading and about research techniques and that it is not intended to appeal to most classroom teachers. Among the persons they identify as those to whom it appeals most are the busy reading supervisor, college professor of reading methodology, and the advanced graduate student. The summary can be valuable to graduate students who want to find out what's been done in a given area and then pursue the more appealing studies in full. Thus doctoral students who are looking for information on a specific topic might well go to the annual summary for a first overview on the topic and to develop a preliminary bibliography for further pursuit.

A recent survey of the users of the summary tends to underline the students' perceptiveness. It found that the preponderance of annual summary users are college teachers, doctoral students, reading supervisors and consultants, and reading teachers.

As the introduction to last year's summary revealed, the authors had questioned whether the summary was serving a useful purpose for the readers of RRQ. The overwhelming number of those who responded to the questionnaire used in their study indicated that the annual summary was useful to them and should be continued. It is indeed a valuable service to the field of reading. I predict that in the year 2000 if a similar study is made, an annual summary—maybe printed out on individual office or home teleprinters—will still be valuable. One may hope that it searches a collection at least as comprehensive as the one presently compiled and that as this summary does it offers analysis of the collection in some useful way.

I. E. Aaron
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Summary of investigations relating to reading, July 1, 1971, to June 30, 1972

SAMUEL WEINTRAUB, *Indiana University*
HELEN M. ROBINSON, *Emeritus, University of Chicago*
HELEN K. SMITH, *University of Miami*
GUS P. PLESSAS, *California State University, Sacramento*

SUMMARIZES 302 reports of reading research published between July 1, 1971, and June 30, 1972. The reports have been categorized under six main headings. The first category includes other summaries of research, classified as general or under specific titles. The second category consists of research literature related to teacher preparation and practice. Category three, the sociology of reading, includes such topics as the content analysis of various reading materials, the effect of reading, and the use of mass media. The largest category in terms of numbers of studies is the fourth, the physiology and psychology of reading. It contains, among other topics, research related to language and reading, visual perception and reading, and socio-cultural factors and reading. Category five, the teaching of reading, has all instruction-related studies from those concerned with preschool reading to college and adult reading. In addition, a section on testing is included. The final category encompasses all research reporting on the reading of atypical learners such as the visually or auditorially disabled. An annoted bibliography follows category six.

Résumé des investigations portant sur la lecture, du 1er juillet 1971 au 30 juin 1972

RESUME 302 RAPPORTS dans le domaine de la lecture publiés entre le 1er juillet 1971 et le 30 juin 1972. Les rapports sont répartis sous six rubriques principales. La première rubrique embrasse d'autres résumés consacrés à la recherche, classés

The authors wish to express their appreciation to Beverly Farr and Carol Greenfield, graduate assistants at Indiana University, for locating and annotating a number of the articles in this report. Jacquelin Stitt, another graduate assistant, aided by reacting critically to some of the abstracts. A special note of gratitude is extended to Shari Kravitz and to Margaret Taylor who aided in the processing of articles at each step along the way. The Annual Summary was supported this year by funds from ERIC/CRIER, Indiana University, and Scott, Foresman and Company.

soit comme d'intèret générale ou placés sous une ribrique précise. La deuxième rubrique embrasse des documents ayant trait à la préparation et aux stages pédagogiques. La sociologie de la lecture, rubrique trois, embrasse divers sujets tels l'analyse textuelle d'un choix de lecture, l'influence de la lecture, et l'usage des mass media. La rubrique la plus importante jugée d'après la quantité de ses études est la quatrième, la physiologie et la psychologie de la lecture. Elle comprend, parmi d'autres sujets, la recherche relative au langage et à la lecture, la perception visuelle et la lecture, et les facteurs sociaux-culturels et la lecture. La cinquième rubrique, l'enseignement de la lecture, embrasse exclusivement toutes les études consacrées à la pédagogie de la lecture, s'étendant de celle de la lecture parmi les pré-écoliers jusqu'à celles des universitaires et des adultes. En outre, une partie est consacrée à l'administration des tests. La dernière rubrique embrasse toute la recherche sur la lecture chez les élèves présentant certains trait anormaux, tels ceux faisant preuve des incapacités visuelles ou auditives. Une bibliographie annotée suit la sixième rubrique.

Resume 302 informes de investigación de lectura publicados entre el 1° de Julio de 1971 y el 30 de Junio de 1972.

RESUME 302 INFORMES de investigación de lectura publicados entre el 1° de Julio de 1971 y el 30 de Junio de 1972. Los informes han sido clasificados en seis categorías principales. La primera de ellas comprende un resumen de otras investigaciones, clasificadas como generales o bajo títulos específicos. La segunda categoría consiste en la investigación de literatura relacionada con la preparación y práctica docente. La tercera categoría, sociología de la lectura, comprende tópicos tales como el análisis del contenido de diversos materiales de lectura, el efecto de la lectura y la utilización de los medios masivos. La categoría más extensa, en términos del número de estudios, es la cuarta: fisiología y psicología de la lectura. Comprende, entre otros temas, la investigación relacionada con el lenguaje y la lectura, la percepción visual y la lectura, y los factores socio-culturales y la lectura. La quinta categoría, enseñanza de la lectura, contiene todos los estudios relacionados con la instrucción que abarca desde la lectura pre-escolar hasta la universitaria, y la lectura de los adultos. Además, incluye una sección destinada a la examinación. La última categoría abarca todos los informes de las investigaciones sobre la lectura en los alumnos atípicos, tales como los visual o auditivamente incapacitados. A continuación de la categoría seis figura una bibliografía comentada.

Each study abstracted in the text of this summary is followed by a number in parentheses which refers to the alphabetical annotated bibliography found after the text.

Of special note to reading researchers and others interested in the field of reading is the word frequency list compiled by Carroll, Davies, and Richman (46). The book contains 86,741 different word samples from 1,045 published materials including textbooks, workbooks, kits, novels, encyclopedias, and magazines. The book contains an alphabetical listing, a rank listing, and a frequency distribution.

Readers will also find the column titled "Researchlight" in *The Reading Teacher* of particular interest. The column contains brief summaries of studies sent in by the authors of the research. Enough information is given to permit a reader to follow-up by writing for the full report if he so desires.

I. Summaries of specific aspects of reading research

This section of summaries includes bibliographies, syntheses, and critiques of research. When more than one article related to a single topic appears, the summaries are classified under a topic heading. The last category, Miscellaneous, contains reviews of single topics.

General summaries

1970 review of research on college-adult reading, by Bliesmer (29).

Bibliography of research in the teaching of English: January 1, 1971 to June 30, 1971, by Blount (32).

Summary of investigations relating to the English language arts in secondary education: 1971, by Cooper (57).

Summary and review of investigations relating to reading, July 1, 1970 to June 30, 1971, by Otto, Barrett, Smith, Dulin, and Johnson (199).

Summary of investigations relating to reading, July 1, 1970 to June 30, 1971, by Weintraub, Robinson, Smith, and Plessas (291).

Beginning reading

But will they ever lern to spel korectly? by Block (30).

Motivational and attitudinal content of first grade reading textbooks, by Blom (31).

Current issues and research gaps in initial reading instruction, by Inselberg (133).

Some basic perceptual processes in reading, by Pick (204).

Research and word development skills, by Tribble (273).

Teaching reading in the kindergarten: a review of recent studies, by Vukelich and Beattie (283).

Culturally disadvantaged

The language experience approach for the culturally disadvantaged, by Hall (113).

A selective review of research and development in the new media, with special reference to the disadvantaged child, by Parry and Unwin (203).

Mass communication

Summary of findings and future research directions. In *Use of the mass media by the urban poor*, Greenberg and Dervin (Eds.), by Greenberg (107).

Summary of related research findings. In *Use of mass media by the urban poor*, Greenberg and Dervin (Eds.), by Dervin, Greenberg, Bowes, and Curley (64).

Language and reading

Language models and reading, by Athey (12).

Implications of language socialization for reading models and for learning to read, by Entwisle (77).

Implications of language research for reading teaching, by Jackson (134).

ERIC/CRIER report—Language, linguistics, and reading, by Blanton (28).

The Peabody language development kit and its function in a language development and pre-reading program: a review, by Milligan and Potter (182).

TESL: a critical evaluation of publications, 1961-1968, by Morrisroe and Morrisroe (185).

Vision and visually handicapped

A review of research: reading and the educable mentally handicapped, by Cegelka and Cegelka (49).

Non-visual communication: IX. Reading by touch (continued), by Foulke (87).

Non-visual communication: X. Reading by touch (continued), by Foulke (88).

Braille reading: a review of research, by Cline and Cardinale (53).

The visual environment of the classroom and learning, by Trachtman (272).

Comprehension

Reading comprehension: the need for a new perspective, by Simons (249).

How to construct achievement tests to assess comprehension, by Anderson (6).

Cloze procedure

The cloze procedure as a teaching technique, by Jongsma (146).

An introduction to the cloze procedure, by Robinson (219).

Miscellaneous

Research in reading retardation: two critical problems, by Applebee (9).

The therapeutic value of reading, by Edwards (73).

Engineering reading: success or failure, by Geeslin (97).

Characteristics of secondary reading: 1940-1970, by Hill (124).

The role of self-concept in the psychological and educational development of the individual, by Leeds (163).

Hyperlexia: the other end of the continuum, by Silberberg and Silberberg (246).

Some experiments on visual and aural word recognition, by Joanna P. Williams (297).

II. Teacher preparation and practice

Goodacre and Clark (103) analyzed the results of a questionnaire mailed to primary school teachers in an English industrial city, in an English county, and in a Scottish county containing both rural and urban areas. In analyzing methods, materials, and records, they noted that English teachers preferred incidental phonics instruction and did not tend to use phonic based programs, whereas Scottish teachers placed phonics first in order of instructional importance and tended to depend on a single reading program, often with a systematically based phonics scheme. The main form of assessing reading attainment was by recording progress through a basal series. When asked to assess their pre-service education, 47 per cent of Scottish teachers and 21 per cent of English teachers claimed that they were dissatisfied with it, while only 15 per cent and 10 per cent respectively expressed satisfaction. In identifying topics of interest for in-service work, the majority of teachers requested aid in knowing how to deal with retarded readers.

In St. John's (232) report, observers' ratings of 36 teachers in interracial classrooms were studied in relation to pupils' academic growth, self-concept, and interracial friendship behavior. Schools were randomly selected from among elementary schools in a large Northern city with enrollments of five or more black sixth-grade pupils. Two classrooms were then randomly drawn from each school. Classes were observed for a week, and the information collected included a running narrative of activities and behavior, interviews with the teacher, sociometric and attitude data, and interaction analyses. Teachers were scored on a modified version of *Ryan's Characteristics of Teachers Scale*. A factor analysis of the observers' ratings of the teachers showed three distinct subscales: Child-oriented, Task-oriented, and Fair. Teachers rated as Child-oriented had high ratings on democratic, responsive, understanding, kindly, adaptable, fair, and optimistic dimensions. Task-oriented teachers were rated fluent, confident, broad, and stimulating; Fair teachers, systematic and fair. Fall and spring grade equivalent scores on the *Metropolitan Achievement Test* were collected from pupils along with grade point average, conduct, and attendance figures. It was found that black children made greater gains in reading under Child-oriented teachers, while white children did best with Task-oriented teachers.

Fleming (85) read to teachers in a graduate level reading course 37 phonic generalizations and asked them to respond with a word illustrating the principle. The number of omissions was then tabulated and compared with findings from three previous studies on the utility level of phonic generalizations. Of the 82 omissions, 62 were found to be from generalizations having a utility value of less than 50 per cent. A total of 20 generalizations accounted for all omissions.

Alston (4) related the performance of classroom teachers on a measure of critical reading ability with age, sex, teaching experience, and preparation in reading. Subjects came from four graduate level reading courses in a predominantly black university. The *Watson-Glaser Critical Thinking Appraisal* was used in assessing critical reading. No differences were found for sex or number of reading courses, but a significant relationship was found for age and teaching experience. In both instances, scores decreased as the other factor increased.

Results on the *Nelson-Denny Reading Test* given to four populations of Southern teachers were compared by Geeslin and York (98). The first group of 37 teachers (Group 1) had been assigned to inservice work. A second group of six teachers (Group 2) had volunteered for inservice education. A third sample (Group 3) consisted of 18 teachers of disadvantaged pupils. Group 4 was composed of 47 teachers and administrators, who were to serve as leaders of inservice reading programs. Comprehension grade level means ranged from a low of 8.8 for Group 3 teachers to a high of 13.0 for the six volunteers in Group 2. Total mean grade equivalent scores were 11.1, 13.8, and 10.0 for the first three groups respectively, while Group 4 had a mean grade equivalent score above the test norms.

III. Sociology of reading

The research summarized in this section reflects the sociologically oriented concerns of researchers in reading. In particular, there appears to be a growth in the area of content analysis of materials especially in relation to the roles of various subgroups and how they are portrayed in texts, books, magazines, and other reading materials.

III-1 Use of mass media

In three studies the use of the mass media by advantaged and disadvantaged subjects was compared. The first was an investigation of the use of mass media by fourth- and fifth-grade students by Greenberg and Dominick (109). The white subjects averaged more newspaper reading than the black ones, with the difference most pronounced between high-income blacks and whites. The white students reported reading a newspaper three or four times a week; the blacks reported reading newspapers fewer than three times a week. Low-income children watched television longer than high-income children. Black children from low-income families averaged approximately seven hours of televiewing daily as compared with four hours for white subjects from high-income families.

Although the purposes of the study by Dominick and Greenberg (68) were principally concerned with television usage and attitudes, several of their findings related to reading. When given a choice between reading a book or televiewing, middle-class adolescents were almost evenly divided in their preference, but 79 per cent of the blacks and 87 per cent of the lower-class whites preferred television. Middle-income teens were more likely to report reading newspapers every day than were the other subjects. A majority of the subjects in all groups tended to believe a television version of a news story more than a radio or newspaper account.

Media behaviors and attitudes of low-income black and white adults were found to be markedly different from those of a general population by Greenberg and Dervin (108). The general population reported significantly higher readership of newspapers and magazines and higher movie attendance than the low-income sample, who spent more time viewing television and listening to record players. The general population was significantly more likely to read regularly the front page, comics, and the sports section of newspapers; the low-income group reported reading regularly the headlines and classified ads. The low-income group considered television as the most believable medium and preferred it for world news. Few differences were found between low-income white and black adults, with white subjects using newspapers more than black ones.

Asking where American youth learns about war in general and about the war in Vietnam, Hollander (128) found that high school seniors depended more on the mass media than on any other source. Of the mass media, television was the most often mentioned

specific source with newspapers and magazines being the next often cited medium. After the mass media, schools were mentioned by most respondents; teachers, rather than textbooks, were the most often mentioned specific school sources. The family, friends, and the church were mentioned in the foregoing order after mass media and schools.

In determining the political use of the newspaper for the reader, Vinyard and Sigel (282) found that their midwestern subjects relied heavily on a combination of television, radio, and daily newspapers for information about public affairs. The newspaper was preferred more than other media because of the relative completeness of news coverage; all three media were judged as being truthful and fair. Loss of newspapers in times of strikes engendered feelings of information loss, increased televiewing or radio listening not being an adequate substitute. Upper status relied more on a great variety of mass media, including news magazines, and felt the loss of newspapers more than other groups of people did.

Salient differences were found in the communication habits and attitudes of three subgroups—(1) clients of social services, 2) social workers associated with the agency, and(3) influentials, made up of locally prominent businessmen, civic leaders, and educators—in the study by Williams and Lindsay (296). Media habits and attitudes varied more as a function of social stratification than of respondent ethnicity. When asked to recall an important news item heard that day, the influentials cited a national or international news item; the clients referred to local items or reported no important news. Newspapers were referred to as the source of information by the influentials; clients received their information from conversations with others. All three groups tended to rate television as the most reliable news source. Influentials tended to read the newspaper every day; clients were divided between being every-day readers or infrequent readers. Approximately one-half of the client sample reported reading no magazines; about three-fourths of the social workers and influentials reported reading magazines less than an hour to two hours. All groups, when asked to recall having seen three issues of the *HOC Newsletter*, were able to do so; but relatively few in each group could recall specific items in one of the issues.

Maslog (173) compared the attitudes of Filipino and Indian students in the United States toward different forms of mass media. A questionnaire administered to groups of students was used. The general finding of the study was that the mass media were many

things to many people. The single most important source of information about Asia for both groups was newspapers and magazines from their own countries (local) with local radio ranking next. Among only the Filipino subjects, books, television, and foreign magazines (those from countries other than their homeland) were important sources of Asian information. More than half of the two groups indicated that foreign newspapers were important sources of news about Asia. To the Filipinos, foreign magazines (such as *Time, Newsweek, Life*, and others) together with local newspapers, provided the most important sources of news about the United States; the Indians considered the local newspaper as the most important source of information about the United States, but foreign books and pamphlets were also important in this respect.

Although every African nation has some kind of news media system, Africa is more poorly endowed with newspapers, books, and other media than any comparable area in the world. Hachten (111) found that the most obvious barriers to the development of news media in Africa were size, language, illiteracy, and poverty. The media serve approximately 10 per cent of the people who are educated and clustered in the cities. Neither mass communications or broadcasting were indigenous to African societies but were a by-product of European colonialism. Despite political independence for most of the countries, Europe still influences news communication; at the same time, there is a real need to "Africanize" the news media in both content and personnel. The new African governments have played a major role in the ownership and control of the news media; often government is the only institution capable of supporting the media. Hachten predicted that as Africa modernizes, the news media will grow and flourish, but African media will also continue to be "muffled drums" for some time to come.

To understand the reasons the Soviet mass media perform as they do, Hopkins (130) traced their history. Of the Soviet leaders, Lenin exerted that most influence on press theory and cast the model for a Soviet centralized press system. Stalin built the mass media structure under strict government censorship, incorporating dullness, conformity, and purposefulness. Krushchev contributed nothing especially original to Soviet press theory but loosened controls somewhat so that the press became a marketplace of ideas. Today the most common type of newspaper is edited for the mass audience, but there are printed media for special interest and ethnic groups. Soviet

broadcasting competed with the printed media into the 1960's for a place of influence. Neither radio nor television is praised by authorities, communicators, or audiences. From the political bureaucrat's point of view, the role of broadcasting is to encourage the acceptance of national goals and to form a particular social structure. Of all the Soviet mass media, probably the most influential is TASS, which provides the Soviet people with the bulk of what they learn of the world about them. Surveys show that mass media reach most of the Soviet people most of the time, with less exposure in the country than in the cities. Although the mass media have contributed to the transformation of an illiterate peasant society into an industrial, educated nation, Hopkins concluded that the contemporary Soviet press has not been so effective as the political leaders would desire. It has far to go to re-establish credibility among the mass audience which was lost during the Stalin regime.

O'Keefe and Kissel (196) chose the death of President Eisenhower as the news event to test a categorization system in terms of the impact of the news on the emotions of the readers. The system was divided basically into three groups: events that would be of little personal relevance and essentially unemotional, those that would be either relevant or emotional but not both, and those that would be both relevant and emotional. The results of a telephone survey showed that 40 per cent learned the news through radio, 22 per cent through another person, and 4 per cent from newspapers. The investigators concluded that the Eisenhower story did not conform to the categorization scheme as had been established. In almost all instances, the respondents acted more as though the event was the relevant and emotional type. The older people were not so concerned by the news event as had been anticipated, but younger respondents reacted more than had been expected.

In their study, Whiting and Stanfield (294) investigated the relationship between the climate of opportunity surrounding an individual and the media that he selected. In particular, they focused on selection of instrumental or entertainment media by rural Brazilian audiences. Interviews were conducted with 1,154 farm operators in 18 different central Brazilian communities. Openness of opportunity climate was inferred from the degree to which land was distributed equally among farmers, and it was calculated by means of a ratio of observed or actual land ownership to the distribution that would occur if every owner owned the same amount of land. Ten com-

munities were constricted in opportunity and eight were open. Little difference was found between the two types of communities and exposure to entertainment in radio and magazines. However, there was a statistically significant difference between the two types of communities with instrumental media. Inhabitants of constricted communities were exposed to more instrumental or occupationally useful media than were inhabitants from more open opportunity structures. An additional analysis was made by stratifying farmers within the community structure into four strata from subsistence to large landowners and analyzing their media use. About four times as many large landowners read magazines as did subsistence farmers.

III-2 Content analysis of printed sources

Researchers who conducted content analysis were primarily interested in three topics: the roles played by men and women, especially the latter; the portrayal of black characters in stories and books; and the treatment of the Indian. Weitzman, Eifler, Hokada, and Ross (292) analyzed picture books for preschool children which won the Caldecott Medal—as well as some Newbery award winners, the Little Golden Books, and etiquette books—to determine sex-role socialization. Girls and women are under-represented, the ratio being 11 male pictures to every one female picture. Boys and men are pictured as active and leading; girls and women are passive followers. Men engage in a wide variety of occupations, but women are depicted only as mothers and wives. A sense of camaraderie is exhibited among boys through their adventures but not among girls.

Stefflre (264) analyzed elementary basal readers to determine how women are depicted—their marital status, their maternal status, and their vocational status. He found that seven per cent of the workers in the readers are women as compared with the 37 per cent in the actual labor force. Of the married working women, 48 per cent have no children; in the readers 44 per cent of married working women are childless. Two-thirds of women workers in readers are working at a professional level; in reality, more women are employed in clerical, sales, and factory occupations. In the readers, 33 per cent of women workers are teachers as compared with seven per cent of women workers who are so employed.

Key (151) reviewed studies concerning the portrayal of the role of male and female characters in children's books and analyzed several books to determine if previous findings held in those books.

Some of the general findings include the following: absence or almost absence of female characters, competency of boys over girls, excelling of boys in creative activities, small number of female characters in illustrations, more males in titles than females, female characters as the butt of the joke, and descriptions of more jobs for male than for female characters.

A psychoanalytic analysis of two six-year-old boys, one black and one white, and of their fathers who appeared in one of the multi-ethnic urban primers was made by Waite (285). Based upon the first four stories, nine hypotheses related to the boy characters were formed and tested in the remaining stories of the series. Distinct character attributes were found for each boy. From this analysis of four characters, Waite concluded that the persistence of unconscious attitudes toward blacks has influenced the story content of books designed to make more equitable situations for black children.

The image of Negroes in the 1930's as portrayed in the first 17 Nancy Drew mysteries was analyzed by Jones (145). Most of the Negroes in these stories had no significance to the development of the stories, were not given names, used incorrect grammar, spoke deferentially to whites, performed other acts of subservience, and were rarely presented favorably. No Negro character was found to be a significant influence for good in the books examined. Although numerous white characters were guilty of various crimes, the white image was relieved by such characteristics as intelligence, courage, and generosity. The series was described as an example of the role of children's literature in the presentation of adult standards concerning minority groups, although these books were probably no more responsible for perpetuating the Negro stereotype than other children's books written at the same time.

Based upon an analysis of state-approved and supplementary elementary textbooks, published since 1962, for reading, geography, social-civic, and health classes, Allen (3) and the committee working with him concluded that the treatment of black Americans, though improved, continues to be inadequate. The pictorial presentation of blacks evolved from an isolated treatment of such Americans as Booker T. Washington to the introduction of Negroes as personalities, but not as people who interact with white persons. Allen found that supplementary texts had a mean of 28.4 more pictures of black people than the regular texts. In the 42 books examined, there were only 20 pictures in which the Negro was portrayed in a working role. Fifteen

of the textbooks completely ignored the black man, but 17 books contained pictures and content that could raise the aspiration levels among black children. Most of the attention given to black Americans in elementary school textbooks occurred in books published since 1965.

Marshment (172) examined novels to determine the ways in which white authors perceived black people and their places within society. Although most black characters appear in novels which are concerned with general social problems, the image of blacks is revealed through the way in which the novel uses and places the black characters. Black characters also help in defining and criticizing the white society. In the novels examined, Marshment found the old stereotypes of the Negro in recent literature. She also found that the black man, but not the black woman, and the "Negro" instead of the Asian have salience in our culture.

The three-part study by McDiarmid and Pratt (177) included a quantitative content analysis of statements in social studies textbooks used in Toronto made about certain minority groups, the analysis by a new system of illustrations of various groups in textbooks, the determination of whether they present stereotypes, and the examination of the manner in which textbooks used in Ontario present certain issues of concern to Canadians. The unit of analysis was the evaluative assertion; three components in each assertion were investigated: attitude objects, connectors, and common-meaning terms. The procedures used, as well as background information concerning content analysis, are presented in detail in the study. The following findings resulted from part one of the study: significant differences were found in the evaluative assertions about Christians and Jews and in the assertions about Moslems, Negros, and Indians, in the assertions about immigrants and those about Negroes and Indians, and in assertions about Moslems and assertions about Indians. No significant differences were found in the evaluative assertions about Christians and those about Jews and immigrants nor between assertions about Negroes and those about Indians. In general, Christians, Jews, immigrants, and Moslems received positive treatment with the Moslems ranking lowest. Negroes and Indians were treated about equally in a negative manner. The evaluative assertions most frequently associated with the groups selected for this study indicated that a somewhat naive stereotype was being depicted in the textbooks.

The results of the second part of the study revealed that the illustrations in many textbooks perpetuated stereotypes of certain groups, with the Indians being the least favored of all the groups. In the third part of the study, eleven critical issues were investigated. Two issues relating to French Canadians were considered to have been adequately treated in most textbooks; the treatment of legislation against discrimination was considered borderline. The treatment of the remaining eight issues was unsatisfactory (either not mentioned or inadequately dealt with).

Kretschmer (158) analyzed the content of the comprehension sections of 16 standardized silent reading tests which represented most of the age levels of elementary and high school students. The content of each test passage was classified into one of 18 categories. The results of the analysis showed that, with the exception of two tests, the passage content was unevenly divided, weighted in favor of animals in the primary level tests, animals and school subjects in the intermediate tests, and science and school subjects in the advanced tests. The subject areas of social problems, humor, fantasy, adventure, poetry, and city life were absent or under-represented. A bias toward middle-class culture was noted.

The purpose of the study by Fox (90) was to analyze religion in current American culture as depicted in *Time* magazine. The history, biases, and editorial policy of the magazine and the philosophy of the key editor were reviewed. The references to religion were analyzed and sorted into eight different broad categories (national affairs, foreign affairs, economics, liberal professions, entertainment, arts, religion, and American culture) or in subdivisions of these categories. Theological tradition was related to the different roles of religion. Using a phenomenological method that was considered to be inductive, Fox arrived at the conclusion that religion was found everywhere in a culture, either positively (living religion) or negatively (dying religion).

The focus of the study by Gecas (96) was on the portrayal of aggressive acts and their motives for different social classes and sexes as these groups have been portrayed in popular magazine fiction. Four periodicals were selected on the basis of their fictional content and the sex and social class of their reading publics: *Esquire* and *McCall's*, middle class men's and women's magazines; and *Argosy* and *True Confessions*, lower class men's and women's magazines. The content

of a random selection of short stories for the time period of 1925-1965 was analyzed for descriptions of aggressive behavior. Men were portrayed as more aggressive than women; their form of aggression was more physical. Their motives for aggression were for utilitarian or normatively required reasons. Women were more likely to express verbal aggression and to have affective and ethical motives for it. Lower class characters were frequently portrayed as using physical aggression with affective motives; middle and upper-class characters were more likely to be depicted as using verbal aggression with utilitarian and ethical motives. The general pattern of forms of aggression and their motives did not change appreciably in the 40-year period.

In an analysis of how one campus press covered disorders, Starck (263) determined that the major proportion of the space devoted to disorders dealt with local news of campus disorders; only a small per cent of the space was allocated to editorials, features, and interpretive reports. Of the 75 persons mentioned in the local disorder news, 45 were interviewed. Of these, 69 per cent responded favorably to the newspaper's coverage of the disorders; 60 per cent held a favorable attitude toward the newspaper generally. Both the favorable and unfavorable evaluations came from all types of respondents. Newspaper staff members felt that the coverage of campus disorders had been fair and objective.

Graber (105) analyzed the presidential campaign information presented by a sample of the national press during the last four weeks of the 1968 campaign. Reporting was relatively free from value judgments with only 2.5 per cent of the general news stories expressing approval or disapproval of the facts being presented. People in large urban areas received more information of all kinds than people in smaller towns. The Northeast ranked highest in quantity of information received; the South ranked lowest. Most of the papers devoted more space to an analysis of the Republican candidate but reported a higher per cent of stories by sources favorable to the Democratic candidate. A strong preponderance of emphasis was placed upon the personal qualities of the candidates; much less attention was given to the professional capacities of a president and to the issues of the campaign. Domestic matters dominated the discussion of issues. The issues referred to by the candidates were different from those mentioned by others when they discussed the candidates. Regardless of geographic, demographic, or political differences, the public received a picture of the ideal president based primarily on personal

qualities, including image projection capabilities, but received little information about the candidates' political philosophies or executive ability.

The American Indian Historical Society (5) collected and analyzed basic Indian source material, principally textbooks, to determine the treatment given Indians. Each textbook was critically reviewed and classified under specific social studies headings and supplementary materials. Among the findings of the evaluations are the following: inaccuracies, degrading descriptions, and distortions about the Indians appeared in most of the books. None of the American history books gave the Indian credit for discovering the American continents. Indian contributions to society are listed in only a few books. The story of white encroachment is glossed over or generally excused in the textbooks; world history textbooks dealt with events from the standpoint of white people. There is a dearth of good books concerning the history and culture of the American Indians.

In a content analysis of editorials appearing in two newspapers in the Philippines, two in Korea, and two in Taiwan, Nam (190) sought to determine the extent of press freedom in each country. In addition to the quantification of the content and the number of editorials in each paper, Nam also made a qualitative comparison by the use of quotations to show the differences among the press in the three countries. In Korea a difference was found in the number of editorials critical of the government in the newspaper which was the government organ and the opposition paper. However, the editorials in the opposition paper in 1965 did not blame nor identify the president. The Korean press has many forms of control which make newspapers cautious of criticizing the government directly. The Philippine opposition press had fewer unfavorable editorials than the press of Korea but named the president in its comments. The Philippine press appeared to be immune from prosecution regardless of what it said and was a free privileged press. A complete absence of criticism of the president was found in the Taiwanese press; almost no adverse comment was made in the editorials in Taiwan. The foregoing situation may be due to the maze of emergency laws, political taboos, and control mechanisms found in Taiwan.

History textbooks in England have changed very much during the past 150 years, according to Glendenning (100). For the most part, the attitudes expressed related to the temper of the times. Nineteenth-century books were written by members of a race who believed

themselves to be superior to the Africans, Indians, West Indians, Boers, and Chinese. Only four out of twelve books in current use in schools attempted to evaluate the development of China in the twentieth century. African history receives considerable attention today, most of which is favorable. In regard to the history of India, most attention in the text books has been paid to eighteenth century events, with a number omitting Indian history after 1857. However, India was treated less harshly than China by textbook writers.

III-3 Readability of magazines

The readability levels for the *Reader's Digest, Saturday Evening Post, Ladies' Home Journal, Popular Mechanics,* and *Harper's* were determined by Barganz and Dulin (17). The *Flesch Reading Ease Formula* was applied to lead articles in issues from 1925 through 1965. It was found that 55 per cent of the articles selected required even greater than high school level reading skills. The investigators concluded that the long-held generalization regarding mass magazines being of a low reading level is false.

III-4 Professional reading of teachers

In an open-ended survey, a selected group of national leaders in education listed four journals and six books they thought all secondary school teachers should read. According to Hipple, Giblin, and Megenity (126), the journal preferences, in the order of the frequency with which each was listed, were as follows: *Phi Delta Kappan, Today's Education, Educational Leadership, NAASP Bulletin, Harvard Educational Review, Journal of Secondary Education, Review of Educational Research, School Review,* and *Clearing House.* The books, in order of popularity, included *Crisis in the Classroom,* Silberman; *The Process of Education,* Bruner; *Teaching as a Subversive Activity,* Postman and Weingartner; *Preparing Instructional Objectives,* Mager; *Freedom to Learn,* Rogers; *How Children Fail,* Holt; and *Summerhill,* Neil.

The results of a survey of reading habits of Florida English teachers led Hipple and Giblin (125) to conclude that these respondents were not reading widely in professional literature concerned with the teaching of English or with education in general. The teachers indicated whether or not they were familiar with the listed journal and book titles related to the teaching of English and to education. One-half of the titles were fictitious. Since the latter were not often

selected, the results were considered to be valid. The best known journals were the *English Journal* and *Today's Education;* the most popular books were Burton's *Literature in the Secondary Schools,* Hook's *The Teaching of High School English,* and Conant's *The American High School Today.* An examination of the data revealed an overall lack of professional reading by the English teachers in this study.

III-5 Readership

La Brie and Zima (160) surveyed the current and future roles of the black press in America. The black press, according to 66 per cent of the respondents, informs the black community about itself, its environment, and its heritage as well as about all matters affecting American society. Fewer than one-third of the answers suggested a continuation of the historic crusading role; one-fourth felt that reporting any news about blacks that fails to be included in the white press should be the main function of the black press. Dominantly black readership was reported by 90 per cent of the newspaper professionals; 10 per cent indicated an increasing number of white readers. Forty-two per cent of the respondents felt that in the future the black press would continue its crusading function; 24 per cent believed the black press would remain an advocate of black pride, and 20 per cent forecast a continued coverage of black news with a continued lack of news integration of the white press. A large majority believed that the black press was firmly established and growing.

More than half of the respondents to a questionnaire concerned with their reading of *Educational Leadership* reported that they read over 50 per cent of each issue, according to Raths (213). The theme articles, editorials, and the feature, "Innovations in Education," were read thoroughly; the remainder of each issue appeared to be skimmed or used as reference material. More than 75 per cent of the respondents indicated that the selection of articles was balanced between specificity and abstractness. The Book Review section and Research in Review feature received low or mediocre ratings. The idea of issue themes received the endorsement of 93.8 per cent of the respondents.

III-6 Social and cultural influences

Turner (278) administered a language-based test before and after a summer holiday to subjects who lived in municipal housing

and those who lived in privately owned property to determine gains, losses, or no exchange in reading achievement. He concluded that when intelligence was held constant, the type of home in which the child lives is significantly linked with his tendency to gain or lose language facility (reading achievement). More able children were slightly less affected by what may be considered adverse forces. The children who were the most adversely affected by environmental factors included the following: those from municipal houses rather than from owner-occupied houses; children with low intelligence rather than the more intelligent; young juniors (8+) rather than older pupils (10+); and girls rather than boys, but not very significantly.

III-7. Library usage

The utilization of the main catalog of a large university library was studied by Lipetz (166), who was concerned about a possible computerization of the catalog and the improvement of the current conventional catalog. Observations of traffic through the catalog area consisted of counting the number of people entering the area at different times of the day and of the year. An interview schedule was constructed to yield a sample representative of the observed traffic profile. By means of a nonleading interviewing procedure, information was derived about the catalog user's objective, starting clues, university affiliation, and search success. The reasons for search failure and the accuracy and availability of different categories of search clues were determined. Lipetz also assessed the published algorithms for searching computerized bibliographic files and gave attention to the feasibility of the automatic construction of computerized catalogs. He found a difference in the catalog traffic between the academic year and the summer vacation period and variations throughout the day and the week. Graduate students, followed by undergraduates, were the heaviest users. Almost three-fourths of the catalog users were interested in document searches.

III-8 Effect of reading

The news exposure patterns of both partisan and undecided readers under varying availability conditions were explored by Atkin (13) in experimental and survey questions. The experimental phase of the investigation examined the effect of availability level and information supportiveness on college student preferences for news articles concerned with current political and social topics. The sub-

jects received a set of dummy composite front pages which featured seven headlines representing newspaper items about various local and national events. The amount of space and the prominence of the display were involved in the relative availability manipulation. The subjects ordered headlines ranking them by beginning with the article they would most want to be exposed to while reading their daily newspaper. A field study was also conducted to measure the relevant variables under actual campaign conditions; the laboratory findings were upheld. Both the experimental and survey findings show that the relative availability of news items about two candidates has an effect on the exposure preferences of individuals with no pre-existing opinions. When most other factors were controlled, people tended to choose neutral information in proportion to the amount of space and favorability of placement it received. When messages were supportive or discrepant of an individual's predispositions, the level of availability was a weaker influence.

The subjects in the study by Donohew and Palmgreen (69) were exposed to discrepant and supportive information; the amount of stress produced under varying messages, cognitions, and personality conditions was measured. The independent variables were attribute importance, supportiveness vs. discrepancy, and dogmatism; the dependent variable was dissonance. High and low dogmatic groups of subjects read discrepant or supportive messages, half pertaining to cognitions they had ranked high in importance and half to cognitions they had ranked low. Discrepant information produced greater psychological stress than supportive information with only low dogmatic persons; this situation was especially true when the material was discrepant with the subject's position on the matter.

To determine media influence on a jury, one week before a scheduled murder trial Simon and Eimermann (248) conducted a telephone survey of potential jurors to investigate their reaction to a news item concerning the alleged incident. The defense had claimed that the news coverage prejudiced the community so that a fair trial would be impossible, but the prosecution denied the allegation. The following findings were reported: 79 per cent stated that they had heard or read about the case, and three-fourths of these subjects were able to give details about the crime; 65 per cent favored the prosecution. The majority believed that, if called upon to serve on the jury they could hear the evidence with an open mind. They would be willing to have their case, if they had been accused of the crime, tried

by a jury in the same frame of mind as their own; and they believed that the defendants could receive a fair trial in the scheduled community. The defense attorney for one of the defendants submitted the survey as evidence that a change of venue was needed. The judge admitted the survey as evidence but denied a change of venue. One of the defendants changed his plea to guilty, and the other was found not guilty.

Subjects in Orwant's (198) research into the effects of propaganda were randomly assigned to one of four treatment groups. Each was given either a derogatory or a nonderogatory editorial. The derogatory editorial contained attacks on U.S. Presidents and other leaders. Both statements were designed to be identified as Soviet in origin and were attributed to either an overheard or a regular communicator. Subjects, who were members of an introductory college psychology class, responded to a questionnaire designed to assess opinion change and given one week prior to treatment, immediately following the reading of the editorial, and one week following treatment. The derogatory article elicited more opinion change than did the nonderogatory statement. Mean change scores tended to be greater for the subjects in the overheard condition than for the regular condition. In a supplementary experiment, using the same materials but with 112 different college students as subjects, it was noted that subjects expected the language of a Soviet publication to be derogatory toward the U.S. and that they saw the nonderogatory editorial as the more favorable to the U.S.

An exploration of the patterns of identification or cathexis that might evolve from reading fiction and of the change in attitude associated with them was conducted by Harless (118). Three cathexis types were posited, each having a positive and a negative end: 1) an entertainment cathexis in which there is an intellectual, puzzle-solving attraction (positive) or indifference (negative); 2) a proximity cathexis in which there is personal identification with the message content (positive) or a rejection of the attitudes and values portrayed (negative); and 3) an instrumental cathexis in which at the positive end the reader sees the material as offering a message that solves the problem, or, at the negative end, the reader does not find problem-solving information in the message content. Subjects were given a pre-treatment attitude measure and then randomly assigned to a control group that read a library pamphlet or to a group asked to read an

adventure-mystery "tough guy" novel. Administration of the post-treatment attitude test and cathexis instruments then followed. Questions representing the six categories of cathexis were assigned to the two-page instrument by a stratified sampling procedure. Subjects ranked the cathexis statements on an 0 to 14 Q-sort scale. Subjects were typed or discarded by their highest factor loading, and only subjects with a factor loading of +.30 were retained in the analysis. Attitude change was determined by subtracting pre- from post-treatment scores. Attitude change was tested against various cathexis types. It was found that simple exposure to an adventure novel did not lead to sweeping attitudinal changes. Two cathexis types were identified. Type One found the story entertaining at best and not helpful in solving problems. Type Two, the larger group, appeared to be strongly attracted to the characters in the novel and tended to be entertained and excited by it. Type Two subjects felt more respect for hoodlums after reading the story.

Beavan (20) attempted to collect four types of information by means of questionnaire data: 1) to determine what kinds of feminine characters appeared in the literature read in high school English classes in Cook County, Illinois; 2) to determine which characters students formed strong identifications with; 3) to determine which characters were most admired by students; and 4) to survey books and characters that students stated influenced them. Questionnaires were sent to English chairmen in public high schools, who were asked to randomly distribute copies to eight students at each grade level, 9 through 12. In addition to the 860 returns from high schools, forms were tallied from 93 junior high students. It was found that 35 per cent of girls and 29 per cent of boys had been significantly influenced by a book they had read in an English class. When asked about a book they had read on their own, 46 per cent of the girls and 34 per cent of the boys identified a book that they felt had changed their thinking or behavior. Of female characters they had read about in English class, 46 per cent of girls said that there were none that they would like to emulate. Girls found more men characters than women whom they admired in their reading. Boys mentioned only 65 women but 824 men whom they admired. Of the 182 literary characters read about in class that girls indicated that they had experienced a strong identification with, only 79 were feminine.

III-9 Reaction to advertising

Bauer and Greyser (19) studied public attitudes toward advertising and advertisements and the reasons given for these attitudes. Participants counted on a band counter advertisements to which some attention was paid in four media: magazines, newspapers, radio, and television; they made a brief record of some of the advertisements which they found to be annoying, enjoyable, informative, or offensive. During interviews which followed the foregoing participations, respondents answered detailed questions about the advertisements in the *Ad Record Book*. Interviews were conducted in 84 sample locations dispersed throughout the United States. The investigators found that advertising was not a topic of great salience to most people except that it and related activities were high among the sources of annoyance people mentioned spontaneously. In terms of overall attitude toward advertising, 41 per cent were basically favorable; 14 per cent, unfavorable; 34 per cent, mixed; and 8 per cent, indiffent. The subjects, as a whole, endorsed the basic economic aspects, were critical of its social aspects, and questioned the content and tone of the advertisements themselves. All groups, whether holding favorable or unfavorable opinions of advertising, drew clear-cut distinctions between what they liked and disliked about advertising. Support or criticism of advertising was only mildly related to age, sex, income, or education. The major reason Americans approve of advertising is for its informational role. They oppose advertising because of secondary reasons; it was considered by some to be unpleasant, boring, intrusive, and interrupting of entertainment.

III-10 Newspaper and magazine publication

The rivalry of the Paddock Corporation, publishers of a comprehensive chain of Chicago suburban newspapers, and the Field Enterprises, publishers of two Chicago newspapers, was studied by Larson (162). Between 1966 and 1969 Field launched the publication of four suburban newspapers in the midst of the Paddock territory. Metropolitan newspapers covet suburban papers in order to insure the placement of display ads in newspapers owned and operated by the metropolitan paper and to regain the readers who moved to suburbia and gave up their readership to the city paper. The metropolitan press acknowledges the growing importance of suburbs in terms of

numbers of people, economics, and control of the power structure of the establishment. When the Field Enterprises sold its suburban papers to Paddock, the journalistic world was stunned. The key to the Paddock victory was marketing research. As a result of a three-month attitude study, Paddock reorganized internally and assumed a dominant role in suburban Chicago.

From her study of the mass magazines published in the 1920's, Bennion (22) concluded that articles concerning reform were not included because the readers were not interested in reform. American mass magazines have often been reflectors of public opinion. Among the most popular magazines of the time were those that had led in the muckraking movement 15 years earlier: *The American Magazine*, *Collier's*, and *The Saturday Evening Post*. They concentrated on romantic fiction, biographies, and human interest features; any articles on reform appeared to be a device to increase circulation. With the disappearance of quality magazines have gone the forums for discussion of national and international affairs. Of the five new successful magazines of the Twenties, four reflected the Americans' lack of interest in reform: *The Reader's Digest*, *Time*, *The New Yorker*, and *The Saturday Review of Literature*. *The Mercury* was considered to be the most effective reform periodical of the decade. The reforming magazines, each with its own mission, struggled for survival and included *The Freeman*, *The Liberator*, *The Nation*, *The New Leader*, *The New Masses*, and *The New Republic*.

The Southern press, according to Carter (47), for 150 years has shown a closer identification with the goals and turmoil of its region than has the press in other sections of the United States. In the pre-Civil War period the major issue was the extension or abolition of slavery and the perpetuation or drastic modification of states' rights. Carter concluded that if the press were not principally responsible for the war, it was involved in the conflict. Such physical problems as shortage of newsprint and the frequent necessity of moving the publication location beset the Southern press during the Civil War. Although much of the war journalism was emotional in tone, some good first-hand, close-to-the-battle reporting resulted. Despite its limitations, the Southern press made contributions to both the theory and practice of journalistic freedom. The trends and problems of the Southern press during the Reconstruction and the current period are also discussed.

The content of a Milwaukee mayor's speeches as reported by two newspapers was compared with the speeches themselves and analyzed by Berres (23). Four standards were used in the evaluation of the reporting, judging whether the report was complete in essence, accurate in detail and meaning, equal in emphasis to the original speech, and equal in its impression on the reader as the original was intended to be on the audience who heard it. Of the 33 speeches in this study, one newspaper reported 23, in which 47 violations of the four standards were found; the other newspaper covered 17 speeches with 30 violations being noted. Only seven of the foregoing news stories fully met the four standards established for this study.

Newspaper interviews appeared as early as the middle 1830's and, although several writers have referred to different interviews as the first one, Nilsson (192) stated that the first interview to appear in newspapers could not be pointed out with certainty. The interviews appeared in the period of the rising penny papers in America. These papers borrowed two of their most popular features from their English predecessors: the humorous treatment of police court news with a human interest angle and the reports of more-or-less sensational trials. The question-and-answer method used in court became a natural technique for the collection of information outside the court.

Synopses of hypothetical news stories, including three pairs of protest stories, were presented to editors of one Philadelphia newspaper, who were asked by Madden (171) to rate each in regard to the page number where each story should be placed and the size of the headlines for each story. The principal difference in the pairs of protest stories was in the way the participants in the stories were categorized. The editors also completed a test which classified them as high or low in authoritarianism. The high and low authoritarian editors differed from each other in their assessments of the demonstration stories but not in the direction hypothesized. Editors of the low authoritarian group tended to mark these particular stories higher than the high authoritarian editors did. The latter group tended to play down demonstration stories regardless of the way participants were described. The low group was more sensitive to the different portrayals of characters than was the high group.

The changes in the editorial policy of *The Saturday Evening Post* between 1939 and 1942 were analyzed by Ryant (228). At the

beginning of this period the *Post* advocated complete economic and military self-sufficiency for the United States and took the position that only the continental United States should be defended. When Germany invaded Poland in 1939, the *Post* pronounced war to be outmoded as an instrument of national policy. As the war continued, the editorials in the *Post* first argued that the problem was a European one and then concentrated on the theme of preparedness. When Roosevelt was elected for the third term as President of the United States, the *Post* took the stand that although it disapproved of American participation in the war, it believed that this participaion was inevitable. By March, 1941, the *Post* stated that any war anywhere was an American battle. When the American entrance into the war became inevitable, the *Post* concentrated on total victory as the unquestionable outcome of the battle. Garet Garrett was one of the major figures during the period of the *Post's* readjustment. What the influence of the *Post's* changing position concerning the war upon the middle class readers was is unknown.

Reporters for both a liberal and a conservative newspaper stated that their opinions guided their reporting more than did those of their editors; the opinions of readers were even less important. The foregoing was found to be true of both news and feature stories, according to Flegel and Chaffee (83); but feature writing was more affected than news reporting. Intrinsic news values of a story are considered much more important influences by reporters than are opinions.

III-11 The foreign press

From his study of economic journalism in the developing countries of India, Indonesia, Korea, Pakistan, the Philippines, Thailand, and South Vietnam, author Mowlana (186) concluded that the growth of economic journalism has paralleled economic development of the nations. After a country achieves some poltical development and stability, the rate of economic journalism increases. News of economics and business is neglected in countries where political, social, and military problems take top priority. Government is a leading publisher and disseminator of economic news. The inability of journalists to discuss economic problems and the unwillingness of economic agencies to have their problems discussed in print contribute to the failure of economic journalism in the developing coun-

tries. The technological and economic advances in these countries during 1959-65 have contributed to the development of economic journalism.

Ayerst (14) presented a detailed account of the Manchester (England) *Guardian* from its beginning in 1821 until the present time. The sources for the history of the newspaper were its files and archives, which included business records, mainly of a financial nature, and letters to and from outside contacts, staff personnel, and contributors. One learns much about the mechanics of newspaper publishing; changes and developments in the *Guardian* in different eras; English life, especially that in Manchester; the lives of the two families, the Taylors and the Scotts, who have dominated the paper since its beginning; political and economic events; rivals of the *Guardian;* and the many people who helped to make the newspaper known throughout the world.

A similarity in trends of newspaper operation in several European countries was found by Hardt (116). In the last decade, a decrease in numbers of daily newspapers was accompanied by an increase in circulation in such countries as the Federal Republic of Germany, the Netherlands, and Sweden. Countries experiencing a loss both in the numbers of newspapers and in circulation include Finland, France, and Great Britain. Direct or indirect governmental subsidy programs were established to aid small-and medium-sized newspaper organizations in Denmark, Finland, France, the Federal Republic of Germany, Italy, the Netherlands, and Sweden. The causes of the decline in the number of newspapers published in the different countries were thought to be rising costs of publication and competition with television for advertising.

Pietila (205) examined the attitudes of Swedish newspaper editors toward the question of government support of the press. A mail questionnaire was sent to the editors, who were asked to respond to statements exploring the issues of press freedom and government subsidy. The socialist editors tended to favor direct subsidy, while the non-socialist editors held reservations about the matter. Though the editors favored general support of the press regardless of party affiliation, they tended not to favor supporting unprofitable newspapers. Only two editors opposed the government's subsidizing political parties and these two also opposed the state support of the press. Swedish editors do not favor the government's providing subsidies to help establish new newspapers.

The forerunners of current magazines originated in the latter part of the sixteenth century and were annual or semi-annual publications printed mainly in Germany, according to Fischer (81). However, the first real magazine with varied contents began in Paris in 1665. The early periodicals were principally oriented to well-educated people. A big influence on the development of European magazines was the English literary and moralistic trend. During the eighteenth century, magazines were largely designed for and read by people in the countries where they were published. Trends toward internationalism, literary specialization, and the publication of cheap popular magazines appeared in the nineteenth century. Developments in the twentieth century include the publication of professional, cultural-oriented, political, and news magazines. The success of the *Reader's Digest* was delineated. Fischer estimated of the approximately 38,000 magazines in the world, the large majority could be classified as trade, class, and group magazines. Although there are fewer titles that can be classified as spare time magazines, the total circulation of those seems to be higher than that of the other groups together.

III-12 Literacy

Countries with high rates of illiteracy have a propensity for increasing the absolute numbers of adult illiterates, while countries with relatively low illiteracy rates tend to lower both the rate and the absolute number of illiterates, according to a NEA Research Bulletin (191). Although the world-wide percentage of adult illiterates decreased in 1970, the absolute figure had increased from 735 million to 783 million people. Both the percentage rate and the absolute numbers of illiterates decreased in Latin America in the 10-year period. The proportion of female illiterates significantly exceeds that of males, except in the United States. The illiteracy rate is higher among the black population than the white population.

One purpose of the study by Vasques, Martinez, and Powers (281) was to replicate a study in which circular letters containing farm information were sent to illiterate farmers who found someone to read the circulars to them. It was also to determine if the length of the circulars and the frequency with which they were sent were influential. The three experimental groups received a pretest, the same information but in circulars of different lengths sent at different times, and a post-test. One control group was not pretested, and the second did not receive any treatment. The Mexican

farmer subjects were illiterate or poorly literate. None had attended school beyond the sixth grade; use of mass media was infrequent among them. After the experiment, the experimental groups did not differ among themselves in the knowledge received from the circulars; but they differed significantly from the group not receiving the circulars. The control group which received the letters did not differ from the experimental groups. The investigators concluded that circular letters appeared to be an excellent means for diffusing agricultural technology; but there was no evidence that shorter, more frequent letters were better than longer ones sent less frequently.

IV. Physiology and psychology of reading

The studies classified into this section continue the trend noted last year of increased interest in factors related to comprehension and interpretation. At the same time, no investigations primarily concerned with rate of reading were found, and for the first time in several years, no studies dealing primarily with laterality were located. The increased number of studies of socio-cultural factors related to reading demonstrates the significance of this problem to understanding how reading is learned.

IV-1 Physiology of reading

Sperry (261) reported on one female subject, age 19, who had complete agenesis of the corpus callosum. Initially, tests showed no adverse effects of this condition, in contrast to marked effects after surgery. There was no loss of recognition of parts of a word to the left or right of the vertical midline, nor was there any hesitation in verbal reports. Speculation of possible unification of pathways between the two hemispheres of the brain were made. She was ambidextrous, and one possibility was that speech was bilateralized. Further testing revealed deficits in space perception, abstract thinking, and mathematical ability despite adequate verbal ability. Implications for dyslexics are suggested, such as extra training in spatial gnosis.

White (293) examined the basis for right hemifield superiority in seeing capital letters by exposing thin lines oriented at one of four angles relative to the vertical. His intent was to examine the language dominance hypothesis using contour orientation as a target. In the first experiment, subjects were required to recognize the letters

A, *H*, *T*, and *V*, at 15 or 20 milliseconds, exposed three degrees to the left or to the right of the fixation point. Letters shown in the right hemifield were recognized significantly better (89.9 per cent) than those in the left hemifield (69.1 per cent). The greatest difference occurred on the letter *V*. To determine if this difference was due to discrimination of oblique orientations, a second experiment was done with eight of the ten subjects used in the first experiment. A thin line was oriented at the following angles: 0, 45, 90, and 135 degrees in relation to vertical. The same number of trials, at a slightly longer exposure, was given at the same distances from the fixation point. The only significant effect was hemifield. The right hemifield was superior (84.2 per cent) to the left (47.4 per cent). Furthermore, the differences in letter and contour orientation for the two hemifields correlated .72 over the eight subjects.

Smith, Schremser, and Putz (254) determined the lead time of the left and right eyes while three subjects read three selections at normal and tilted positions. The study was made possible by binocular eye-movement transducers on goggles along with complicated processing by an analog-digital-analog computer system. Saccadic movements of the eyes could be measured in milliseconds and differences between paired binocular saccades were determined. The method of measuring minute differences is considered one of the major values of the study. The nine reading selections were ranked *easy*, *medium*, and *difficult* with the Flesch formula. In addition to viewing the display in a normal position, one selection of each difficulty level was turned through 15 degrees to the right and another, 15 degrees to the left. The results showed an overall binocular difference of 6.7 msec. with the leading time value for the left eye. Orientation from the normal position to the left was not significantly different from normal, but orientation to the right differed significantly. The distribution of time differences between the two eyes was trimodal. The modes occurred at 1, 8-9, and 14-15 msec. for the three subjects, and was found consistently.

IV-2 Sex differences

Rubin (225) compared the language and readiness skills of boys with girls before and after one year of kindergarten attendance with those of children who had not attended kindergarten. The tests used were the *Illinois Test of Psycholinguistic Ability (ITPA)* and the *Metropolitan Readiness Tests*. Both were given the summer preceding

the subjects' fifth birthday and again one year later. To determine the socio-economic equivalences, the experiment used an index including education, occupation of household head, and total family income; the four groups were very similar. Analysis of variance of the pretest mean scores showed that boys attending kindergarten scored significantly higher on the Alphabet subtest and the total score of the *Metropolitan* than did those not attending. Likewise kindergarten boys scored significantly higher on the Visual Decoding subtest of the *ITPA*. Kindergarten girls surpassed no-kindergarten girls on the Auditory Decoding subtest of the *ITPA*. Analysis of covariance of the post-test scores, using initial scores as covariates, showed girls superior to boys in five of the six readiness subtests and seven of the nine subtests of the *ITPA*. Boys who attended kindergarten scored significantly higher (.01) than boys who did not on five of the *ITPA* subtests and the total score; girls attending kindergarten surpassed controls only on the Visual-Motor subtest of the *ITPA*. The conclusion was reached that girls are more advanced than boys before kindergarten and boys make greater progress during kindergarten.

Good and Brophy (102) selected three boys and three girls ranked high by teachers and three boys and three girls ranked low in each of four classrooms to determine differential teacher behavior during reading instruction and in nonreading classroom activities. Four hours of reading instruction was coded and analyzed. Coding considered turns at reading in the group, teacher-afforded and pupil-initiated responses, the quality of response, and the type of feedback given by the teacher. No significant differences were found between boys and girls during reading instruction. Differential treatment was shown favoring high over low achievers, however. When data from all classroom activities were compared, boys produced more correct answers and received more criticism than did girls. This was especially true of low achievers, but differences were attributable to classroom behavior of the boys. The *Stanford Achievement Test* was given in May, after all observations were finished. Analysis of variance reflected no achievement by sex interactions, even though small reading differences favored girls.

Brown, Cook, and Davis (37) focused on sex differences in ability to read for two different critical thinking skills: 1) drawing inferences and 2) distinguishing between relevant and non-relevant information. Test instruments were developed from second grade basal materials previously read by pupils. Tests were read orally to

children as they read them silently. An analysis was then made to determine if boys performed better on boy-interest questions and if girls did better on girl-interest questions. No significant differences were noted between sexes on either of the tests of relevant versus non-relevant information. However, there did appear to be a difference between performance and sexual orientation.

IV-3 Modes of learning

Reynolds (217) reported four experiments to determine the relative effects of visual and oral presentation on word association responses. The subjects in the first experiment were "emotionally disturbed adolescents"; in the second, seventh and eighth graders in the Northeast; in the third, third graders in the rural South; and in the fourth, fifth graders from the same Southern area. The stimulus words were 19 concrete nouns expected to elicit paradigmatic responses. Words were presented to groups either orally or visually, with an overhead projector, and all responses were written. Two judges rated each responses as to whether or not it was paradigmatic. Data in the first experiment were analyzed according to sex, age, and IQ; but only the mode of presentation produced significant differences. Oral presentations produced nearly twice as many paradigmatic responses as did visual presentations. No significant differences were found in the second experiment with seventh and eighth graders. The results of the third and fourth experiments supported those of the first, showing significantly more paradigmatic responses to oral than to visual presentations. The investigator suggested a conflict in cognition between what pupils hear and what they read.

Segal (239) compared four types of perceptual training programs with kindergarten children in relation to changes on tests of reading readiness and IQ. The 60 lower socio-economic subjects were assigned to treatments by double stratified random sampling procedures including sex and IQ. The four treatments were 1) general readiness (GRP), 2) visual perceptual skills (VAP), 3) auditory alphabet skills (AAP), and 4) VAP and AAP stressing discrimination and production of letter shapes and sounds (AVAP). Pretests and post-tests included 1) the *Pintner-Cunningham Primary Test of Mental Ability*; 2) *the Gates-MacGinitie Reading Readiness Test* (presumably the Auditory Discrimination subtest) and the Phoneme Part 1 subtest of the *Murphy-Durrell Reading Readiness Analysis*, for auditory perception; 3) the Visual Discrimination subtest of the *Gates-*

MacGinitie Test and the Letter Name subtest of the *Murphy-Durrell* battery, for visual perception: and 4) the Learning Rate subtest of the *Murphy-Durrell* battery. Another test was designed by the investigator for the post-test, similar to the Learning Rate subtest except that words were grouped according to "graphic likeness" (*i.e.*, cat, hat, rat). The time lapse between tests was not specified. Three hypotheses were tested by establishing homogeneity of regression and analysis of variance with different pretest measures as covariates. No significant differences were found between GRP and AVAP on the Auditory Discrimination subtest of the *Gates-MacGinitie* test; between the GRP and the AVAP on the Visual Discrimination subtest of the *Gates-MacGinitie* test; between AVAP and VAP, pooled, and GRP and AAP pooled on the Learning Rate subtest of the *Murphy-Durrell* test, although univariate F (.056) approached significance with letter names; or between AVAP and AAP pooled and AVAP and VAP on the Phonemes and Learning Rate subtests of the *Murphy-Durrell*. Significant differences were found between AVAP and AAP on letter names and the Learning Rate subtest of the *Murphy-Durrell* (.05) favoring AVAP; and the AVAP was significantly (.05) more effective than the other three treatments in raising scores on the *Pintner-Cunningham* test. Intercorrelations of post-test scores are presented, and seven are above .64.

Jenkins, Bausell, and Jenkins (137) reported four experiments comparing the ease of learning four-letter names or letter sounds with the transfer effects of the two procedures. In Experiment 1, 96 subjects near the end of first grade were assigned to three groups: letter-name (N), letter-sound (P), and control (C). The letters *i*, *a*, *n*, and *t* were taught, either by name or sound. The control group learned an unrelated paired-associate list. The learning was to criterion or 30 trials. Then all subjects had training in phonic blending and learned four words— *in*, *it*, *an*, *at*— to criterion or ended with 30 trials. Trials to criterion were compared. Significant differences (.01) were found in initial learning with N superior to P and C groups. On the transfer, N and P did not differ but both were superior (.01) to the C group. The second experiment was done early in first grade, and subjects were pretested to be sure that none could name the letters or read the transfer words. Twenty subjects were randomly assigned to N and P groups. The difference in mean scores was highly significant (.001), confirming the relative ease in learning letter names compared to letter sounds. Experiment 3 used only

the 36 subjects who recognized the four letters but not the words. The training procedure was altered to speed up the learning of sounds. Besides, different training for transfer was given to the N and C groups—essentially on spelling. The results were similar to previous ones, in that the P group was significantly superior to N and C groups in transfer. In Experiment 4, no pre-transfer training, neither blending nor spelling, was given. Twenty trials were given to learn the words, and the number of correct responses of the groups were recorded for these 24 first graders. Again group P significantly (.001) out-performed group N in the transfer task.

Kirsner (155) carried out two experiments to determine the effects of age changes on memory comparison and decision time. Age ranges from 9-10 years to 51-69 years for subjects were chosen so that all subjects could read. They represented average or above average ability and were tested individually. Subjects received five trials of four-list words per minute; each 35 trial block included 28 "old" words and seven "new" words, all two-syllable nouns of five, six, or seven letters. Two blocks were constructed for each of the visual and auditory modalities, one block for decision (did the following test word appear in the block?), and one for memory, naming the test word. Auditory items were presented through earphones, and the auditory response triggered a throat-microphone signal (AA). The visual items were presented on a film, and visual test words were exposed 1.5 seconds (VV). In Experiment 1, only AA and AV were compared. The basic data were median reaction time for correct responses to each combination of task and test modality. The difference between decision and naming latency, called corrected decision latency, was used to appraise the memory component. The results showed that decision was slower than naming and the AV slower than AA. Analyses of variance showed that the proportion of variance accounted for by the main effect of age was reduced from 30.2 per cent for decision making to 6.6 per cent for corrected decision analysis. In corrected decision analysis, the main effect of age was significant with AA latencies significantly faster than AV latencies. The interaction of age and test modality was significant (.05), but only for the AV was there a difference between 10- and 14-year groups. In Experiment 2, from each age group, 16 subjects were drawn to compare AA and VA. Otherwise the design was the same. As in the previous experiment, corrected decision latency substantially reduced age differences; the AA showed little change with age, while the VA

decreased from 10 to 27 years, and, unlike AV, from 25 to 60 years also. The proportion of total variance accounted for by age was reduced from 39.6 per cent in the decision analysis to 7.2 per cent in corrected decision analysis. AA latencies were significantly faster than VA latencies. The main effect of age in AA was not significant, but in VA the effect was significant with a decrease in relation to increased age. The conclusion was reached that perceptual and response factors are more sensitive to age than is memory and that AA uses representational information, while AV and VA are based on information in an abstract-verbal memory system.

Locke and Fehr (167) analyzed the electromyographic (EMG) records of covert phonetic behavior while using phonetic and non-phonetic stimuli and immediately prior to oral or graphic recall, to explore causes of such coding. The 24 subjects were subjected to four conditions described to them as "see-say," "see-write," "hear-say," and "hear-write." They were told to observe and recall lists of familiar words. Each of eight lists contained five words: those requiring articulation of labial phonemes (L), and those with no labial phonemes (N). Two control lists (C) were composed of five flashing lights or five sounds. Auditory stimuli times ranged from 180 to 680 msec. and visual from 400 to 480 msec. Surface electrodes were attached to the chin and interior surface of the lower lip, to the left ankle, two fingers of the left hand, and below the right temple. Analysis of the single greatest peak during presentation on the EMG revealed that L and N values significantly (.05) exceeded C periods. A significant difference was found between L and N for "see-say" and "hear-write" during presentation and for all four conditions during rehearsal (10-second delay before recall). Also, analysis of between-conditions of L/N ratios revealed significant differences during presentation but not rehearsal periods. The "see-say" ratio significantly exceeded the "see-write" (.05) and the "hear-say" (.01) but not the "hear-write" conditions. Recall scores did not differ significantly. The only substantial evidence of phonetic coding was during presentation and when the subjects anticipated the requirement of crossing modes and codes.

Ingersoll and Di Vesta (132) tested the hypothesis that visual attenders would recall more visual stimuli and exhibit marked primacy in recall, while aural attenders would recall more auditory stimuli and show marked recency effects in recall. The mode of at-

tenders was determined by presenting two digit spans simultaneously, one visually and the other aurally. Those who recalled more digits correctly on five presentations from the aural presentation were classified as aural attenders; when more digits from the visual presentation were recalled, subjects were classified as visual attenders. All subjects were given the bisensory missing word test in which five words were presented, then four repeated in random order asking the subject to supply the fifth one. Ten trials were given. Examination of the distribution of written responses by all subjects as a function of presentation made and serial position did not support greater recency for recall of aural stimuli nor the primacy effects of visual stimuli. Beginning with 69 subjects, the 24 aural attenders and 16 visual attenders who scored at extremes of the digit test distribution of scores were compared. Neither the main effects of modality preference nor number items recalled was significant, but the interaction of modality preference and presentation modality was (.05). The visual attenders recalled more visual than auditory missing words while the auditory attenders recalled more auditory than visual missing words. Differential recall patterns were found too, in which visual attenders surpassed aural attenders on recall of the first serial position and aural attenders surpassed visual on the last serial position (.05).

IV-4 Experiment in learning

Mustico (189) investigated some of the relationships among learning through association, intelligence, and meaningfulness. The learning material was three-letter trigrams (CVC) and (CCC), each paired with a two-digit number. The trigrams were selected from 80 of previous lists by administering them to subjects at each of five educational levels to determine the mean number of associations with each (meaningfulness). Six trigrams were selected at each of four levels of meaningfulness. The 24 trigrams and digits were presented 10 times for learning. The IQ was determined by the *Otis Alpha, Beta Gamma* or the *California Test of Mental Maturity.* Socio-economic status (SES) ratings were made from father's occupation. The investigator found a positive correlation (.38) between IQ and the total number of associations given to the 80 trigrams. Age was also related (.70) to total associations to trigrams. A low, but significant Spearman's Rho ($-.17$) showed that low SES subjects tended to have fewer associations to the 80 trigrams. Comparing high versus low

IQ groups, mean differences between the groups' learning scores decreased at levels three and four on the Meaningfulness rating for all ages. The most meaningful learning materials were CVC for sophomores, while the least meaningful were CCC for third graders. A graphical representation suggests that the mean number of associations to the PA task before the learning experiment accounts for more of the variance in learning scores than does the IQ. Mustico interprets this finding as a suggestion that attention to associative learning will be helpful in reading readiness.

Otto and Pizillo (201) explored the extent to which intralist similarity affects kindergarten children's rate of acquisition, subsequent word recognition, and tendency to make generalized responses to similar words. In the preliminary study, 18 subjects, six assigned to each list, were familiarized with the words by explanation and use in a sentence, then tested through sentence completion. No errors were made, so the 36 remaining subjects participated in the main experiment. Three lists of four words each were used: 16 letters (16-L) presenting no intralist similarity, 8 letters (8-L) with medium intralist similarity, and 4 letters (4-L) with high intralist similarity. Following pre-familiarization training, each subject received acquisition training for 12 trials of serial order in which pupils tried to say the word before the experimenter. Then the words were shuffled and presented in a random order to criterion of correct anticipation of the entire list. Correct responses were verbally reinforced. Recognition was determined by asking the pupil to indicate the word pronounced by the experimenter in a list including the original word and two variations: the second and the last letters. Finally, each subject read the words in the generalization task which included four new four-letter words, each with one new letter substituted symetrically across possible positions. List effect was subjected to univariate analysis of variance by comparing the 16-L with combined 8-L and 4-L groups, and comparing 8-L with 4-L groups. Mean number of trials to criterion differed significantly (.01 and .001) in both comparisons with the 16-L requiring fewest and the 4-L group most trials. The medium similarity group, 8-L, responded more like the 16-L group than the 4-L group. No significant differences were found in the responses to the word recognition task. In comparing generalized responses, the 16-L group differed significantly (.02) from the combined 8-L and 4-L groups, but these two did not differ. The behavior of the 8-L group, unique to this study, showed more rapid rate of acquisition than the

4-L group but no differences in generalization. The investigators suggest that medium similarity of words will be effective for initial learning to read.

Samuels (233) examined two components of letter-name training, discrimination and discrimination plus naming, to determine if either increased learning to recognize pseudo words. In the first study, 100 pupils were assigned randomly to four treatment groups: 1) letter discrimination, 2) letter-name, 3) control 1, receiving irrelevant training by learning names of dogs, and 4) control 2, taught to read the four transfer words immediately. The graphemes for letter discrimination and letter names were artificial, designed not to resemble English letters. Four letters were associated with four geometric forms in the discrimination task, and were to be named by the letter-name group. The transfer task was four two-letter words using the four artificial letters. A paired-associate anticipation method was used with correct feedback. Subjects continued to criterion of one perfect trial or the fortieth trial. A one-way analysis of variance showed no significant differences among the groups on the training tasks. Likewise, planned comparisons were computed with no significant differences. The second study, done one year later, replicated the first but with only one control group. Again, none of the differences were significant. Two approaches to estimates of the power of the test were made, and the beta error was well within limits of chance. Therefore, the conclusion was reached that letter-name knowledge does not facilitate learning to read the words made up of these letters, even among children who have already learned something about reading.

Mason (174) sought to determine whether misreading of a pair of words, similar in letter components and/or configuration would be affected by the sequence of the words taught and the duration of instruction on each word. Data were collected by 48 teachers attending an inservice class; each teacher selected one of the most retarded readers in his class. The experiment included a 10-minute daily session for instruction by the "word method" for four days and testing on the fifth day. At each session, five words were taught with a predetermined sequence: 1) five List I words were taught for three sessions, List II was taught the fourth; 2) the same as sequence one with List II taught first and List I second; and 3) the order was the same as sequence one but each list of words was taught twice. The lists had two forms: one for primary and the other for intermediate

and secondary teachers. The test included the shuffled deck of 10 word cards. Each subject's first response was recorded and analyzed. Errors were of two types: naming a similar word from the alternate list, or naming a word on neither list. All three sequence groups made more correct responses to the list taught first. The Chi-square technique was used to determine significant differences. The only significant difference suggested that List II was more difficult than List I. The unusually large portion of errors involving words from the alternate list, compared to those on neither list, suggested that proactive inhibition was more likely than retroactive inhibition.

Russell and Sewall (226) investigated whether the serial-position effect, established earlier with word lists, held with connected discourse along both quantitative and organizational dimensions of recall. The passage used was a 163-word summary of arguments about electing a male or female prime minister. The pro and con statement pairs were reversible around a conjunction and their position as pairs interchangeable in the passage. The statements were arranged in 24 pairs, then reversed around conjunctions, making 48 positions. Passages were tape recorded and subjects listened to them. They were asked to listen and record recalls as near to the original as possible. Recalls were divided into tenths related to the position in the original source. Analysis of variance considered sex and the source of recalled materials. Using accurate content words for position, the effects were significant (.01) while sex differences only tended toward significance (.10). Using the number of sequences, position effects were also significant, but not sex. Analysis of accuracy of recall as a function of position in recalls using content words was significant also with only marginal sex differences. The most accurate recalls were in the first segment with decreasing accuracy on succeeding segments. The serial position effect seems to hold for both dimensions of recall accuracy in meaningful verbal materials, with no apparent differential between quantative and organizational dimensions.

Rothkopf (222) determined whether readers recalled the portion of text and the location on the page where questions were answered. Two passages, each 3,000 words, were typed on 12 pages and multilithed. Then 32 completion questions were prepared for each passage, with eight test items from each three typed pages. Three alternate forms were used, each with different random arrangement of quesions. Subjects were instructed to read the text to

learn as much as possible. When they finished reading, they put the passage in an envelope, removed the questions and answered them. The questions dealt with the substantive content. Second, subjects were asked to indicate the quarter of the passage from which the question was derived. Third, they indicated in what eighth of the page the information was found. Finally, for each location, subjects marked, on a four-point scale, their confidence in each judgment. Results from the two experimental passages were equivalent, so they were pooled. Chi-square analysis revealed that page position memory was greater than chance (.001). There were marked differences in the frequency with which each location was marked, with the third and fourth eighth most frequently marked and the fifth and sixth next in frequency. Likewise the Chi-square revealed greater than chance (.001) differences in text location. Besides, within-page location recall was more accurate when correct answers were given to substantive questions, as was true of location in the passage. Confidence ratings and text sequence were also related.

Todd and Kessler (271) compared three response modes across three levels of story difficulty for males and females who had high and low reading ability to determine the effects on recall of meaningful prose. There were 36 groups of subjects, each with five members. The groups were composed by sex (M and F), by reading ability (high and low), by passage difficulty (three lengths), and response modes (three). They were under 21 years of age. Their scores on the *Ohio State University Psychological Test* were used to select 45 each of males and females among top and bottom scorers, considered high and low in reading ability. A short story was prepared in three different lengths: 44, 140, and 256 words respectively. Length was equated with difficulty in terms of recall. Following a pilot study, appropriate reading times were established for each condition. Subjects were instructed to read until time was called, to read and underline important parts, or to read and take notes. Recall was scored by total number of words, total number of eight-word sequences, total number of identical words, and total number of idea units. Idea units were transformed to per cent of number possible while the other measures were converted to T scores. For the total number of words recalled there were no significant differences among levels of difficulty nor modes, but females recalled more words (.01) than males and high readers recalled more words (.005) than low readers. When idea units were considered, subjects at the middle

level of difficulty recalled more words (.005) than at the higher level; again, females and high readers surpassed their counterparts. For eight-word sequences, neither sex nor difficulty level was significant; but high readers surpassed low, and the underline group exceeded the reading group and the note-taking group. Identical word recall yielded no differences in difficulty or response modes, but females and high readers exceeded respective groups. Total numbers of words, idea units, and identical words correlated with each other .927 or greater while the eight-word sequences correlated .111 at the highest with the other three.

Another study dealing with recall of meaningful prose was done by Schultz and Di Vesta (237). They explored the effects of passage organization (concept, concept attribute versus random order) on clustering by concept or concept attribute, and recall when students read only or read and took notes. Three trials of five minutes each permitted repeated analysis of strategies. The passages described six imaginary nations (social studies content). Six characteristics (concept attributes) for each nation (concept) were described. Each of three study periods was followed by a six-minute free-recall writing period. Data for both recall and clustering came from the three free-recall protocols. Concept-name and concept-attribute ratios were calculated for the passages and the protocols. Adjacent repetitions determined clustering. The number of statements correctly recalled and the number of errors were recorded. Sixteen high-school juniors and seniors, in the upper 20 per cent of their class academically, were randomly assigned to each of three passage organizations. Half of each group read only, while half took notes. A 2x3x3 factorial analysis of variance with repeated measures (trials) was the statistics used. The analysis of clustering based on concept names showed a main effect (.05) of passage organization, and based on the concept attribute, also (.01). Clustering by concept was greater on the passage organized by concept and by concept attribute on the passage organized this way; both were significantly greater than on the random passage. Correlations between the obtained concept name and concept attribute clustering ratios for individuals was −.91 for the name group and −.32 for the random order group, which suggested consistent clustering on the first two types of organization and fairly inconsistent clustering when the material was not organized. Analysis also reveals that overall, concept name was used more than concept attribute. However, taking notes appeared to minimize the effects

of passage organization. Examination of the strategies over the three trials showed that the concept-name group readily adopted this strategy on the concept-name passage. In contrast, the concept-attribute group, with notes, adopted concept-attributes more slowly and without notes, only on the third trial. When recall was considered, the means for both concept-name and concept-attribute groups significantly exceeded the random-order group, with no significant effects due to notetaking. The number of statements recalled correctly was not related to clustering via concept name ($r = -.03$) nor concept attribute ($r = -.04$). Moderate relationships between clustering and recall were found for each trial. Analyses of incorrect statements showed the main effect of notetaking to be the only one significant, and more errors were made with than without notes.

IV-5 Visual perception and reading

Prior to summarizing the research in this area, attention should be called to two theoretical reports. Technically, they do not summarize research; each one uses fragments of previous research to explain the processing of visual information in reading. Bower (33) suggested that 1) reading can be a visual process, which does not involve mediation from other input systems with a lower data rate; 2) in visual text there is complex information which specifies the grammatical form of sentences, creating high probability that the amount of character-by-character processing is minimized; and 3) reading is a sequential process in which ongoing processing is affected by prior processing and, in turn, affects future processing. As a result of experimentation, Bower proposed the following steps in processing a sentence: 1) decide on syntactic form: 2) use the information to locate deep structure subject; 3) go to verb stem; 4) go to deep structure object; 5) check whether the foregoing steps have accounted for all of the words in the sentence; 6) discover any negatives; and 7) respond. In normal reading, a greater amount of context is supplied than in a sentence. Fast readers become very competent in identifying sentence structure, whereas slow readers do not. In an experiment using Greek letters that map into single English sounds, all /ee/'s and /o/'s were replaced making mutilated words. On the average, a mutilated passage required one and one-half times longer to read than a standard passage. This finding suggested that the visual attributes were far more important than the auditory because the sounds of the mutilated words were

unaltered. Also, in an electroencephalographic study, the activity of the visual and auditory cortex were studied. Bower concluded that for skilled readers, reading is a visual process and that it *might* be effective to teach reading by exposure to probable word patterns.

Sperling (260) proposed a model of information processing of an array of letters based on numerous experiments. He hypothesized the following components: 1) a very short-term but very high-capacity visual memory; 2) a visual scan component that converts the representation of a letter in visual memory into the address of the motor system for rehearsing the letter; 3) a short-term memory for this address; 4) a rehearsal component that converts the subvocal rehearsal into an auditory representation; 5) an auditory short-term memory for the sound of the letter; and 6) an auditory scan component that converts the auditory representation into the address of the motor program for rehearsing the letter. Thus, six kinds of long-term memories are involved: visual, auditory, motor; and visual-motor, auditory-motor, and motor-auditory associations. Moreover, Sperling suggests that the visual system is capable of analyzing a word, not letter by letter, nor even by overall shape, but from information gathered, in parallel, from the component letters. The visual search rate will be limited only by the rate of eye movements. Finally, when letter arrays are presented visually, they are remembered in auditory short-term memory, as if they had been presented auditorially.

Crary and Ridgway (60) sought to determine whether visual discrimination, visual-motor-copying or visual-motor-memory is most closely related to reading achievement at the middle grade level. The tests for visual perception included: 1) Perceptual Speed—the Perceptual Speed subtest of the *Primary Abilities Test;* 2) *Visual-Motor-Bender Visual Motor Gestalt Test;* 3) *Visual-Motor Memory-Benton Revised Visual Retention Test,* (Forms C and D), Visual Reproduction and Memory-For-Designs Test subtests of the *Wechsler Intelligence Test for Children.* Intelligence was assessed by the *Kuhlmann-Finch Tests,* and reading was determined by the use of the *Iowa Silent Reading Test* and the Reading subtests of the *California Achievement Tests.* It is assumed that all tests were given at approximately the same time. The range in IQ for the six experimental classes was 109 to 111.5. All tests were scored and prepared for the computer. Differences in coefficients of correlation were revealed by the *Hotelling t* test, and the probability

of true differences among them were calculated. Of the 20 values calculated at each grade, all were positive for grades four and six, while 18 were positive for grade five. The probabilities of this many positive *t's* by chance are so remote that the authors concluded that visual-form-discrimination was more closely related to reading than either visual-motor copying or visual-motor memory.

Olsen and Amble (197) determined the effects of five perceptual learning conditions on enhancement of pupils' reading achievement. The *Phrase Reading Development Program-Intermediate Level* was used with four groups, eight classrooms, while the control groups remained in the language-arts reading progarm. The Film Group simply viewed the film with no reinforcement; the Attention Group pressed a switch each time a phrase appeared on the screen; the Contingency Group received maximum social recognition from the teacher and the peer group and through self-comparison charts; and the Attention plus Contingency Group received both of the preceding treatments. Each film contained 260 practice phrases and seven test phrases, a total of 5,200 given twice daily three times per week. Criterion Phrase Tests were constructed to determine changes in numbers of words correctly recorded. The *Iowa Silent Reading Test (ISRT)* was also given before and after the training and five weeks later to determine the permanence of changes. In the analysis of the pretest scores, there were no significant interactions and no sex differences. The mean predicted Criterion Phrase Test scores on the post-test averaged nine points higher than predicted for the Attention plus Contingency Group and five points higher for the other three treatments. No significant differences among these treatments were found. The same ordering effects continued for the delayed post-test. The Attention Group made substantial gains on the Paragraph Comprehension subtest of the *ISRT*, and it remained on the delayed post-test. No other effects on reading scores were found, except that the Film Group showed 1.6 grades decrement compared to the Control Group.

Halliwell and Solan (114) compared the effects of visual, auditory, and visual-motor supplementary training on the reading achievement of first graders with supplementary remedial reading and with regular class instruction. Based on the *Metropolitan Readiness Test* scores, a regression equation was used to predict end-of-year scores on the subtests of the *Metropolitan Achievement Test (MAT)* battery; 140 pupils were identified as potential poor readers.

Then each pupil in this group was matched as closely as possible with two others on readiness regression score and sex. One of each of the matched trios was assigned to each of three groups. The Experimental I group participated in the regular reading program and, in addition, received two weekly 45-minute sessions of perceptual training. The training included sensory processing, intersensory development, fine and gross motor development, and concepts of directionality and laterality. The Experiment II group participated in the regular reading program and received an equal amount of supplementary training in such activities as word recognition, phonics, blending, comprehension, and listening. The control group had no supplementary training. The duration of experimental instruction was November 1 to May 20. Thereafter, the *MAT* was given and scored. Only the Reading Comprehension subtest of the *MAT* was used as a criterion (no reasons were given for omitting others). Because of skewed distributions due to the original sample, the *Friedman Two-Way Analysis of Variance* by Ranks and the *Wilcoxon Matched-Pairs Signed-Ranks Test* were the statistics chosen. In each sex group, the Experimental I group obtained the highest means score, while the control girls scored higher than the Experimental II girls. Differences among the three treatment groups of girls were not significant. The Experimental I boys significantly (.05) exceeded the control boys but not the Experimental II group. No significant differences were found between the Experimental II boys and their controls. As a result of the boys' scores, the difference between means of the total Experimental I and Control groups differed significantly (.05); but as with boys, the Experimental II group did not differ from the other two groups.

Aderman and Smith (1) compared the identification of strings of letters in which spelling patterns (SP) were incorporated with strings of unrelated letters (UL). After subjects had completed 15 trials as expected, a string of letters from the unexpected class was shown. The purpose of this step was to determine the effects of expectancy or "set" on processing of words, either by individual letters or by spelling units. The stimuli were 34 five-letter items, half containing three SP's and the other half only five UL's. The SP's were constructed so that the initial and final consonant clusters were permissible in English and pronounceable (*i.e., SCORG*). The UL's were constructed by switching initial and final consonant clusters (*i.e., RGOSC*). The stimuli were presented tachistoscopically

for 110 msec. After this another slide with typewritten *X*'s and *O*'s occupied the same positions as the stimuli. These were accompanied by alternative letters above and below the one probed for. The subject reported aloud the one letter that originally occupied the specified position. This plan was used to reduce the memory problem. Half of the group of 216 undergraduates saw SP and half saw UL items for 14 trials. The mean number of SP items correctly reported was significantly (.001) greater than the number of UL items. The fifteenth trial for each group was the same and was the critical one because it was followed by the sixteenth in which each group received the unexpected strings. Comparisons of performance revealed that when the subject expected a UL item but received a SP item, there was no significant difference in scores; but, when subjects expected an SP item, and received a UL item, their performance was significantly (.01) poorer than when they expected and received SP items. With the last 72 subjects, response time was recorded. The "expected SP-presented UL" condition was significantly (.05) longer than any of the other three conditions. Moreover, there was no difference in accuracy on the second and fourth positions but a sharp drop on the fifth position. The results support the conclusion that individual letters or SP units may be processed in English and that expectancy can determine which functional units are formed.

Frith (94) explored two causes of reversal of letters in two experiments: first to determine discriminability of letters and second to determine response bias. Discriminability was considered a perceptual act, while response bias was considered memory. The first experiment used 15 letters and five digits, as well as the mirror-image of each, presented in random order with normals first then reversed forms. Children copied each symbol beside it on the same sheet of paper. The letters *b*, *d*, *p*, and *q* were not included because the mirror image of one would be the normal form of another. All errors of reversal and rotations of both sets were counted as errors. Relatively few errors were found and most of those were on the mirrored forms. To obtain the discriminability of a stimulus pair, the ratio of incorrect to correct copies was calculated. A score of zero represents maximum discriminability while a score of one indicates lack of discriminability. The ratio was zero for the letters *F*, *E*, *C*, *K*, and *G*, while others ranged from .01 to .11. A score of the strength of the response bias was obtained to see how often one left-right orientation had occurred in relation to the other. The 10

with the lowest scores were categorized as weak bias and those 10 with highest were called strong bias. In general, letters with a strong bias tended to be more frequent in English than did those with weaker bias. With one exception the bias was always toward the usual orientation of the symbol: the digit 9 had a slight preference for reversal. The author suggests that the reversal errors of *b-d* and *p-q* may be due to lack of bias. To determine if response bias depended on practice at school, Experiment II used 10 children, ages 3.5 to 4.6, who could not read or write letters to compare with those one year older who had been in school. Since the younger children could not copy the letters and digits, it was necessary for children in this study to match them. The two groups contained matched pairs in terms of total errors made on the experimental task. Both groups had attained approximately 60 per cent correct responses. Moreover, all children outside the 33 to 66 per cent were excluded to equalize task accomplishment. Besides, matching in terms of total errors controlled discriminability so that bias could be examined independently. The letters used were *N*, *J*, and *Z*; the digits were *5*, *7*, and *9*; and six nonsense symbols were constructed. Each symbol, accompanied by its reversed form, appeared along with three others on large cards. A small card was also prepared for each of the 24 symbols. After a short pretraining period, each child selected from eight symbols the one that matched the stimulus card. On the average, the pupils mismatched 10 of 24 symbols, with by far the greatest number on nonsense symbols (.02). Analysis of errors showed group differences relating to letters and digits only. The older children made significantly (.02) more errors when the stimulus was a mirror image while no difference occurred among the younger children.

Nodine and Lang (193) investigated the kinds of visual scanning strategies used by children in differentiating words and the changes that occurred from nonreaders (kindergarten) to readers (third grade). Because prior studies have shown that pupils attend to first and last letters, the pseudo words were designed so that only the second and third of four letters differed. The middle letters were of high and low discriminability; the 10 unmatched pairs had the two middle letters of one pseudo word presented in reverse order in the other pseudo word. Another 10 pairs were identical. A biometrics eye-movement monitor recorded each pupil's visual scanning while the voice was simultaneously recorded. Latency of response was the dif-

ference between onset of the stimulus and voice response. Subjects were cautioned to look at each letter of the pseudo words before deciding whether they were alike or different. Each subject was shown one of four 10-pair subsets, half matched and half unmatched, and half of high, half of low confusability. The data included a measurement of the location and duration of each visual fixation during matching. Of the 490 records of 49 children, only 240 from 24 subjects were scorable. Four kindergarten subjects made three or more errors in matching, and two third-grade errors were found. Generally, more and longer fixations accompanied errors. The four kindergarteners were eliminated for the comparisons. Analysis of variance used two dependent variables: total number of letters fixated per matching test, and total fixation time for matching test. Analysis of the data revealed that the only significant main effect for number of fixations was produced by pairing of matched and unmatched targets, with about one extra fixation for matched pairs (.05). While this extra fixation tended to increase fixation time, the difference was not significant. Kindergarteners averaged two extra fixations on matched pairs, while third graders' fixations on matched and unmatched pairs were equivalent. Distribution of fixations and time over the eight-letter positions was analyzed. Both groups made more fixations and used more time on target letters (the two middle ones), with third graders having a higher proportion than kindergarteners. The former group spent 37 per cent of their time on target letters compared to 45 per cent for the latter, suggesting that visual scanning is more efficient at third grade. Subjects were found to compare, sequentially, equivalent target-letter positions in the two pseudo words, and to compare letter values for correspondence. The sequence of paired comparisons was significantly right-to-left but both directions were used. The authors concluded that improved perceptual strategies were the direct result of increased cognitive control over eye movements.

Carroll (45) developed a scale of short-term visual memory based on selection of a design among four targets. The scale was used along with a number of others to determine relationships to reading readiness and achievement tests. The *Visual Memory Scale (VMS)* was composed of 35 simple to complex geometric designs, with one to three in a single array. They were printed on a card, and another card included the same design along with three others (multiple-choice retention plates). A preliminary study with five-

and six-year olds showed it to be adequate. The *Slosson Intelligence Test (SIT)*, the *Harper-Row PreReading Test of Scholastic Ability to Determine Reading Readiness (H-R)*, the *Wide Range Achievement Test (WRAT) and the Memory-for-Designs Test (MFD)* were given also. Three groups of children took the tests: Group I, eight classes of kindergarten and first-grade pupils; Group II, educable mentally retarded with no demonstrable central nervous system impairment; and Group III, educable mentally retarded who manifested central nervous system impairment. Only 60 pupils in Group I took the reading portion of the *WRAT* and only Groups II and III took the *MFD* test, while all subjects who could do so took the other tests. The data revealed a significant relation between chronological age and the number of errors on the *VMS* (.05), but no sex difference. Using the *Mann-Whitney U Test*, a significant (.05) difference in scores on the *VMS* was found between impaired and non-impaired groups. The coefficient of correlation between the *VMS* errors and the *H-R* test was —.39; between the *VMS* and *WRAT* reading scores, —.25 for first graders. For Groups II and III, r = .40 between the *VMS* and the *MFD* error scores.

Smythe, Stennett, Hardy, and Wilson (257) traced the development of upper- and lower-case letter knowledge and determined relationships among letter familiarity, letter discriminability, and letter naming. Pupils at kindergarten and grade one alternated naming and discriminating the letters. By the end of grade two, pupils knew the uppercase names (UCN) of letters except *I*. On the UCN test, pupils learned the first half more quickly than the last half. Also, by the end of grade two, most pupils had mastered the LCN task. The LC letter *l* caused most difficulty; it was confused with the UC letter *I*. No pattern of mastery, even among the youngest, was evident. Norms from the *Murphy-Durrell Reading Readiness Analysis* were correlated with the scores of the youngest group in this experiment; for UCN, r = .29; for LCN, r = .66. A rho was calculated between UCN and LCN on the *Murphy-Durrell* and the value was .26. A similar calculation for this group of subjects yielded a rho of .55. Coefficients of correlation between the per cents of correct performance on discrimination and naming yielded a rho of .08 for UCN and .47 for LCN. Frequency of occurrence of the letters in the first 500 words of the preprimer correlated with the subjects' scores yielded .37 for UCN and .19 for LCN. Factor analysis of the frequency of knowledge of each leter for UCN yielded three factors tentatively

identified as: Factor 1, letters from the last half of the alphabet; Factor 2, letters from the first half of the alphabet; Factor 3, letters *A, B, C, E, I, O, X*, or the easiest and least discriminating. LCN produced three factors but they were not clearly identifiable.

A second study by the same authors, Smythe, Stennett, Hardy, and Wilson (258), traced the development of discrimination of both upper-case (UCD), and lower-case (LCD) letters. The subjects appear to be the same as described in the preceding study. Each letter was accompanied by three foils; foils were chosen by judges to be most similar to the respective target letter. The pupil's task was to locate a match for a target letter among the four. Tests were administered individually to pupils in kindergarten and grade one but in groups to pupils in grades two and three. The data revealed that pupils could discriminate almost perfectly all UC letters by the end of grade one, and there was little difference among letters in discriminability. However, LC letters were more difficult to discriminate and show greater variability. For example, in the youngest group only 61 per cent successfully discriminated *d* and *p*. For the correlation analyses, all items successfully discriminated by 98 per cent or more of the youngest age group were eliminated. Only eight items remained in UCD and 12 in LCD, so they were pooled for analysis. Coefficients of intercorrelation were factor analyzed, yielding six factors. Factor I included letters *C, G, M, N*, and *r, u*, the pairs of which are similar. Factor II contained *b, d, p, q*, and *t*. It seemed that all except *t* were identical except in a different orientation. Factor III included two subsets: *h, n, u, p, g*; and *M, i*. The remaining factors could not be interpreted.

To investigate the effects of visual discrimination training on immediate and delayed word recognition in kindergarten, King and Muehl (153) compared 20 groups of kindergarten children by kind of training, kind of word, and sex. Children were given five different types of visual discrimination training prior to learning to read a common list of four words. Twenty-four hours later, they were given the four words again as a recall task. The training groups were: 1) same-word (SW), in which the same words appeared in the reading and recall tasks; 2) same-letter (SL), in which the same letters appearing in the stimuli were constituents of the words used in the reading and recall tasks; 3) different-meaningful word (DMW), where stimuli used were different from the words appearing in the reading and recall tasks and there was presentation of picture and

sound with the visual form of the word; 4) same-letter and different-meaningful word (SL + DMW), where training with same letter words was followed by a similar number of trials (4) with different meaningful words; and 5) different-meaningful word and same letter (DMW + SL), the reverse of the previous type of training. For each of the five types of training, two groups learned to read words similar in configuration and sound and two groups learned dissimilar words. The analysis of the data for the reading task showed significant differences only for kind of word, trials, and an interaction between trials and kind of word. Dissimilar words were significantly easier and faster to learn to read than similar words. For the recall task, the data revealed that again dissimilar words were easier to read than similar words. There was a significant interaction between kind of word and sex, with girls doing better than boys on dissimilar words; but there was no sex difference on similar words.

IV-6 Auditory perception

Buktenica (39) reported a description of the *Test of Non-Verbal Auditory Discrimination (TENVAD)* and its relationship to reading in the three primary grades. This group test is similar to the *Seashore Test of Musical Talent* and composed of five parts: Pitch, Loudness, Rhythm, Duration, and Timbre. The 50 pairs of tones, 10 in each subtest, are either the same or different. As the taped recording is played, children mark appropriate circles for same or different. The *Kuder-Richardson* reliability was found to be .75 at age 6 for children; .78 at age 7 with the 407 remaining children, and .77 at age 8 based on the 356 children remaining from the original group. Children were from white middle, white lower, and black lower classes. Validity could be determined only by correlation with the *Wepman Auditory Discrimination Test* ($r = .40$). At the first grade, the *TENVAD* was correlated with subtests of the *Metropolitan Achievement Tests* as follows: Word Knowledge, .47; Word Discrimination, .51; and Total Reading, .51. The *TENVAD* accounted for 26 per cent of the variance in reading test scores. The *TENVAD* given at first grade was correlated with subtest scores of the *Metropolitan* given at third grade as follows: Word Knowledge, .53; Word Discrimination, .48; and Total Reading, .52. The former accounted for 27 per cent of the variance of the latter scores.

McNinch (179) examined the predictive power of five auditory areas along with readiness and intelligence measures for begin-

ning first graders in relation to reading scores obtained five months later. The subjects were six boys and six girls selected randomly from each of 10 first-grade classrooms in one school system. Of the 120 subjects, 111 completed the testing. The following tests were used: *Auditory-Visual Rhythm Perception Test (AVRP), Aural Word Representation Test (AWR), Roswell-Chall Auditory Blending Test, WISC Digit Span,* and making Auditory Discriminations (subtest four of the *Harrison-Stroud Reading Readiness Profiles*). Initial testing was done early in the school year. Final testing used the *SRA Achievement Series* with four subscores and a total. Mean scores on the test appeared to be depressed but standard deviations were more typical. Co-efficients of intercorrelation among the auditory tests ranged from .28 to .59, with all but one significant at the .01 level. Coefficients of determination, however, were much lower, ranging from .08 to .35. Although the skills were related, they were not synonymous. No significant sex differences were found. Only the first canonical correlation (.749) was significant and the *Lorge-Thorndike Intelligence Test (M.A.)* made the largest contribution. The *WISC Digit Span* contributed a vector weight of .36; Letter Names (.27) and Using Auditory and Context Clues (.28), subtests of the *Harrison Stroud Reading Readiness Profiles,* added also. Verbal-Pictorial and Language Perception were the major contributors to reading achievement. Each of the predictor variables was correlated with the total reading score, and the magnitudes did not support the Fowler model; nor did the step-wise regression technique.

In a study to determine the development of some of the skills contributing to learning to read, Smythe, Hardy, Stennett, and Wilson (256) produced and tried out a test of auditory discrimination. To avoid the use of words and nonsense syllables or words which are commonly employed, the investigators chose the 42 "pure" phonemes, pairing each with every other. Where it was not possible to enunciate a pure phoneme, as /p/, in isolation, an unstressed vowel was added. Item discrimination was tested in one direction only, with choices made randomly. A total of 861 pairs were formed: vowel-vowel (VV)-78; consonant-consonant (CC)406; and vowel-consonant, (VC)377. Another 430 buffers were added to make 1,291 items. Twenty-one subtests were created, each containing 60 items; another subtest had 31 items. The subtests were tape recorded and given to the subjects by a teacher on 22 consecutive days at the end of the school year. Analysis of variance of the mean per cent of correct responses showed

high significance (.001) revealing a clear developmental trend from grades one to four, and all per cents were above 90. Differences between consecutive grade means, however, were not significant. Analysis of performance was made by pair type. The only significant difference was between V-C and C-C pairs with superior performance on C-C pairs. A factor analysis of errors or confusions was completed. The five factors had loadings on only one test, while the other had three loadings. Factor I was identified by /v/ and /th$_z$/, both fricative consonants; Factor II included /r/ and /ur/; Factor III, /u/ and /Schwa/; Factor IV, /f/ and th$_i$/; and Factor V, /m/, /n/, and /ng/. Thus it appeared that difficult pairs were made up of consonants that were similar in place of articulation.

Sapir (235) compared young children's auditory discrimination ability, using similar phonemes placed in words and nonsense syllables, and their discrimination of sounds at the beginning, middle, and end of words and pseudo words. Subjects were the entire kindergarten of one school: 82 girls and 68 boys. Subjects came from varied ethnic and economic backgrounds. The test was composed of 10 pairs of words from the *Wepman Test of Auditory Discrimination* and 10 pairs of nonsense syllables having characteristics similar to the 10 words. Two pairs of words and syllables were identical, three pairs differed at the beginning, four differed at the end, and one had a medial difference. Each child was tested individually following the *Wepman* technique, and responses were "same" or "different." Scores were the number correct among words and among nonsense syllables. The investigator found more correct responses at the beginning of words and syllables than at the end. No significant differences were found between correct scores on all words and nonsense syllables. However, the difference between *v* and *th* at the beginning favored (.001) the nonsense syllable while *am* endings favored (.01) words. She suggested that the reason why verbal mediation did not aid temporally presented auditory stimuli was that many of the words did not have meaning for these kindergarten children.

Brown (34) sought to determine the effects of two phonemes versus one on either side of the break on one-syllable words in blending training. Six approaches to training were used with eight types of blends. Each subject was asked to blend 24 words on each of four days and take a final test of 32 words on the fifth day. The words were selected from the *Rinsland* list for first graders. They were arranged in three groups each of consonant-vowel (CV) or

vowel-consonant (VC). In Groups 1 and 4, the presentation order was easy to hard; in Groups 2 and 5, hard to easy; and in Groups 3 and 6, mixed. The final test included four words in each of eight categories: VC-SS/SS (four syllables), VC-S/S (two syllables), VC-PP/PP (four phonemes), VC-P/P (two phonemes), CV-SS/SS, CV-PP/PP, and CV-P-P. The list was arranged in 20 different random orders for individuals in each group. Six experimenters carried on the 10-minute sessions, usually on consecutive days with two days intervening before testing. Rewards were given for successful performance and errors were corrected during training. Data submitted to analysis of variance were the number of words blended correctly for each of the eight stimulus groups. The significant main effects were CV-VC, and the linguistic unit between which the break occurred, Syllable-Phoneme. Further analysis revealed that syllables were easier to blend than phonemes; for two phonemes, VC blends were easier than CV; and CV affected only the SS/SS. The increase in phoneme blends, P/P to PP/PP, corresponded to more correct blends. Single syllable, S/S, blends were easier than PP/PP; but no differences were found for SS/SS. Overall, VC training resulted in higher scores. Random order training produced higher scores than either CV or VC alone. CV training led to similar CV and VC test scores; VC resulted in considerably higher VC scores and equal CV scores. Of the two, VC seems to be most effective. The linguistic units, S or P—blended on the last day before the test—increased the scores of the corresponding items on the test, showing that one did not tranfer well to the other. The conclusion was reached that optimal training would involve easy to hard within S and P or with S and P interspersed.

IV-7 Language and reading

Söderbergh (259) recorded and described the detailed responses of one girl who learned to read Swedish by the Doman method, beginning at two years, four months. The investigator considered it a pilot study to determine the questions relevant to a large-scale study. During the first six weeks, cards with words denoting familiar things and actions were shown. The girl enjoyed handling and responding to the cards with large red letters. In the seventh week when words from a book were used, she experienced difficulty with "functors" (*what*, etc.). A book was prepared for her in which minimal functors were used, sentences were short, vocabulary was adjusted, and an attempt to appeal to her interest was made. During

this period, similarities between word images were noted, certain letters were noticed, and new words were compared for similarities and differences with known words. During the fourth and fifth months, she learned the names of the letters and read four new books with about 150 new words. In the sixth month she began to attempt new words by adjunctions (adding of known parts), deletions, and substitutions. She began to analyze words into letters but not to put them back together. Initial letters were important. Functors were first learned when she put them in linguistic context. There was continuous and voluntary rereading of books with memorizations, such that words from separate books could be sorted by book. This is compared to verbal repetition and interpreted to be a stage of general linguistic development. Earlier, when reading her first book, she pointed to each word and paused between each. In the sixth month she voluntarily stopped pointing, and her reading began to resemble normal speech. In the next six months the girl learned to read most unknown words. Extensive comparisons were made of misidentifications in terms of word length, common letters, order and position of letters, and similarities and differences among letters. Analysis was made of dependent and independent morphemes and of graphemes. After 14 months, the girl was reported to be able to recognize grapho-phonemic correspondences and to have broken the code. Later, the "rules" appeared to have been discovered gradually. Meanwhile, intonation and phrasing developed automatically. She criticised the language of books and began to identify with book characters. At the age of three and a half, she began to write letters, first capitals then to write connected discourse. By age four and a half she had learned to spell without instruction.

Four studies dealt with aspects of *language development* in relation to reading readiness or reading achievement. Bickley, Dinnan, and Jones (25) examined the relationship between oral associates and reading readiness test scores. None of the 52 subjects had attended kindergarten. Reading readiness was determined by the *Metropolitan Readiness Test*, and subjects were divided into high and low groups by the median split. During the week following the administration of the readiness test, the *Oral P/S Language Inventory* was administered. The *Inventory* included 30 words which were given orally for each subject to respond to with his first association. The responses were classified as having either paradigmatic (superordinate, subordinate, coordinate, contrast, or part-whole) relationships,

or syntagmatic (all other responses). The *t* test was applied to the paradigmatic and syntagmatic data for high and low readiness. The mean syntagmatic responses for the low readiness group was significantly (.01) lower than for the high readiness group.

A second study of word associations at fourth grade was reported by Bickley, Bickley, and Cowart (26), who explored the relationships between oral associates to 30 words and achievement in reading. These words made up the *Oral P/S Language Inventory.* Responses were classified as paradigmatic (super-ordinate, coordinate, contrast, or part-whole), or syntagmatic (all others). The *California Reading Test* was given and scores divided into high and low groups by the median split. Lows ranged from preprimer to grade 3.2; highs scored from 3.3 to 4.6. The number of syntagmatic responses given by the high and low reading groups were compared using the *t* test. The difference was significant (.05) with the mean of the low reading group higher.

The third study, done by Chomsky (51), identified selected syntactic structures and tested their emergence, then related scores on these structures to reading background and current activity of the subjects. In the first part of the investigation, the author explored areas in which six-year-old children were deficient and adults were competent. In all, nine structures were explored, only five of which revealed a sequence. The test included these constructions: *easy to see,* where the word order was misleading; *promise,* with a missing subject; *ask,* with a missing subject; *and* or *although,* in which a verb is missing. The syntactic structures required children to abandon rules that generally apply to language. Embedded in sentences, the five structures were tested verbally and with pictures. Although the number of subjects at different age levels was small, the divergent test tasks were acquired by these children in the order listed above. The common feature of the task is to fill in a missing item to complete the sentence, and to recreate the underlying form. However, the five constructions could be ordered in a *Guttman* scale and their acquisition progressed from simple structures to complex ones. Unlike most investigations in which reading achievement tests are used, Chomsky gathered data on a questionnaire for a week's duration. A record was kept by children and parents at home of all reading done by children and all listening to books read to each child by the family. The investigator's formula for measuring syntactic complexity was applied to books and magazines reported. Also, Huck's

Taking Inventory of Children's Literary Background was used to assess knowledge of the content of 60 items from children's literature. The important finding was that the higher the *Huck* score was, the higher was the linguistic stage generally. A Master Book List (400 titles) was checked jointly by the child and parent. The total number of books with which children were familiar was related to linguistic stages but the number at the top level of syntactic complexity was more clearly related to linguistic development. From the parent interview, a numerical score included such items as library trips, books withdrawn, favorite books and authors, and number of people in the home who read to the child. *Kendall's* rank-order correlation coefficients between data gathered from parents and children, and the five linguistic stages were positive and substantial. IQ obtained from the *Wechsler Preschool and Primary Scale of Intelligence* and the *Wechsler Intelligence Scale for Children* increased with linguistic stages. Furthermore, both Verbal and Performance IQ's followed the same pattern. Census Bureau measures of socio-economic status was significantly correlated with linguistic stages, with IQ, and with all measures of books from parent and child interviews. Mini-comparisons made of a few children with uniform age and IQ revealed that children were at different linguistic stages. The main contribution of the study, according to the author, is to point out fruitful areas for further exploration of language development after school age and to identify concomitants.

The fourth study dealt with selected factors in the language development of preschool children. Brown (36) explored the effect of three factors in syntactic structure of restrictive relative clauses on picture-cued comprehension of children aged three, four, and five years. The three factors were: 1) embeddedness, position of the clause; 2) focus of the relative pronoun; and 3) the relative pronoun itself. The two positions of embeddedness were center (CE) and right (RE). Two positions were designed for the relative pronoun within the embedded clause: subject focus (SF) and object focus (OF). Four kinds of relative pronouns (P) were considered: *who*, *who*-deletion, *which*, and *that*. A total of 24 sentences were constructed. A total of 96 children were stratified by age (3, 4, or 5 years) and sex and randomly assigned to either forward or reverse order of presentation of the sentences. Comprehension was tested by having the child point to one of two pictures so constructed that each lexical item in the stimulus sentence was represented in the two pictures. Before they

were included, subjects were screened and a short training session was given to be sure that each one could respond to color and directions. Two analyses of the data were done. In the first analysis, the only significant main effect was focus (F). The interaction of the age group with RE and CE showed the latter to be relatively easier for three year olds; RE appeared to develop rapidly between ages three and five. Moreover, SF was higher than OF. The EP and FP interactions showed that different pronouns had different effects at different levels. Large differences were found between SF and OF for both *who* and *who*-deletions with smaller differences for the other two pronouns. In the second analysis, all three syntactic factors had significant (.01) main effects. Of special interest was the finding that *who* and *who*-deletions were significantly more diffcult than the *which* and *that*. The EF interaction was significant, but word order may account for it. One of the implications of the findings deals with the kinds of questions used in preprimers. Some examples are shown of pronoun deletion and object focus which probably would not be understood, even by five year olds.

Several investigations were based on linguistic understanding. Weber (290) examined the use that beginners made of context preceding and following an oral reading error and analyzed errors according to the dominant influence: syntactic or graphic similarities. Oral reading errors were recorded in one classroom, by two observers, as children read from their texts during daily lessons with their teachers, over nearly six months. In a second classroom, children's reading of a selection was tape-recorded. Class I had a median *Thorndike-Lorge* IQ of 109.2; for Class II, the IQ was 110.5. The scores of the high group in Class I on the *Metropolitan Achievement Test* (given in May) was nearly one year beyond norms and of the low group about equivalent to norms. Class II scored somewhat higher than Class I. Oral reading errors were assigned to four classifications, only one of which, substitutions, was appropriate for analysis in this study. Substitutions constituted about 80 per cent of the 1,072 errors for Class I, and about 94 per cent of 871 errors for Class II. Substitutions that would permit the sentence to be completed grammatically, not necessarily by the words of that sentence, were considered acceptable while others were not acceptable. A large proportion (91 per cent) of errors in Class I, and 87.7 per cent in Class II were grammatically acceptable. There were negligible differences in the proportions of acceptable responses among

high, middle, and low groups. The grammatically unacceptable words were analyzed to determine an "index of graphic similarity," devised by the author for the study. Arbitrary weights were assigned to selected features, such as beginning and ending letters or frequent adjacent pairs. Mean scores on this index showed a large number of graphic cues. Moreover, grammatically unacceptable error responses shared more graphic features with the stimulus words than did the error responses that conformed to preceding grammatical context. To examine the effect of errors on the subsequent context of a sentence, five weekly readings by 20 members of Class I were tape recorded. Children could ignore or correct errors as they chose. The rate of errors per 100 words was 3.9 for the high versus 6 7 for the low group. Substitution errors comprised 84 per cent. The grammatical acceptability was judged up to, and including, the error in the sentence. Tabulation showed 94.5 per cent of errors acceptable to preceding context, 6 per cent immediately upset the grammatical structure, and 32 per cent made the sentence ungrammatical. The grammatical errors were disregarded more than twice as often as they were corrected, but the ungrammatical errors were corrected twice as often as they were ignored. The high group ignored only 15 per cent of ungrammatical errors while the low group ignored 58 per cent.

Jarvella and Sinnott (136) determined the extent to which noun distributions for subjects and objects of 36 common verbs are similar among children at ages nine and twelve years in relation to adult standards. The verbs were used in both active and passive sentence frames in which the cloze procedure was followed with sentence subjects and objects deleted. These common verbs were classified according to constraints on the "animacy" of nouns in both positions. Each subject completed 36 sentences with randomized verbs, alternating active and passive frames. Instructions were read to the children but read by the adults. A distribution of 21 to 24 responses were given to each noun slot by children in third and sixth grades and by college students. The investigators found that virtually all nouns were concrete, 80 per cent of subject and 50 per cent of object nouns were animate, and 85-90 per cent of animate nouns were human. Using the categories of verbs, predictions concerning "animacy" were confirmed. There were slightly more human and animate nouns in the pre-verb than the post-verb positions. "Animacy" decreased (.001) with increased age. Also, the diversity of responses

increased with age. Substantial proportions of agreement between active and passive frame distributions for subjects and objects separately were found for both children and adults; they were greater than intersections between subjects and objects (.001). Less agreement was found among adults than among children and generally less among sixth than among third graders' responses.

Tuinman and Hafner (277) tested the hypothesis that the position of descriptive adjectives in a sentence would not affect their information value. Using the cloze technique, information value was determined by the probability of a correct fill-in. A set of 60 sentences was prepared in two forms: 1) adjective prior to noun, and 2) following it in a subordinate clause. The effects of adjective position was determined by three tests: Test A—regular cloze (preread intact); Test B—precloze (not read intact); and Test C—a *Removal of Information Procedure (RIP)* test. Scores were transformed and subjected to analysis of variance. Only the effect of the method measurement was significant (.01). Five orthogonal comparisons were made with the effect of the position of the adjective on each of the Tests, A, B, and C. Significance occurred (.05) only for the precloze test; the adjective following the noun produced a higher mean score.

Fraunfelker (92) explored the effects of phonetic compatibility on verbal learning with two age groups and determined the relationship to reading. Phonetic compatibility refers to ease of articulation of a series of sounds in speech. High phonetic compatibility involved fewer sounds (6), while low compatibility included more sounds (8-12) and made verbal materials more difficult to learn. The subjects, who were white and Negro, were divided into two compatibility groups, two grade level groups and two sex groups, making eight in all. Groups were equated by using matched pairs according to IQ from the *Goodenough-Harris Drawing Test*. Dependent variables were response learning, acquisition, and retention. Stimuli were colors, while responses were consonant-consonant-consonant trigrams. Two lists of six trigrams each were rated by judges as high and low in phonetic compatibility and in speech difficulty. However, graphic symbols were controlled. The reading test at first grade was the *Stroud-Hieronymus Primary Reading Profiles* and at third grade, the *Iowa Tests of Basic Skills*. Following the warm-up task of two paired associates, subjects were given six colors and trigrams in 12 continuous trials in acquisition. Retention was determined by exposing each

stimulus alone until a response was made. Each trigram was considered as a unit so that errors within it resulted in an incorrect response. Results of the factorial analysis of variance showed that phonetic compatibility had a highly significant effect on response learning (.01), acquisition (.001), and retention (.001). High compatibility produced faster learning at both grade levels. Effects of grade levels were similarly consistent over the three measures, with third graders performing better than first graders on both high and low compatibility measures. Intercorrelation coefficients of IQ with other variables were uniformly low with one exception. But intercorrelations between phonetic compatibility and reading at first grade did not differ as a function of high or low compatibility. At third grade, all correlations between phonetic compatibility and reading were substantial (.54 to .73) in the high compatibility group but either nonsignificant or negative (.13 to —.25) in the low compatibility group. The data provide some evidence of the difference between first and third graders in the use of coding strategies.

Smith, Jensen, and Dillingofski (255) examined the effects of creative versus noncreative writing tasks on attitudes, recall, and identification of main ideas in a selection. The fourth-grade subjects were classified as low (below the thirty-seventh percentile), middle (thirty-seventh-sixty-fourth), and high (sixty-fourth on) by scores on the Reading Comprehension subtest of the *Iowa Tests of Basic Skills*. Within each group, three treatment groups were asked to: 1) read a selection and write an extension beyond the author's ending; 2) do the same as in (1) except to either write a summary, describe a main character, or describe a main action in their own words; 3) read the selection. All three groups took an attitude inventory of six items directly related to the selections read. All took a comprehension test of five items, four of which were factual recall type and one of which dealt with the main idea. The nine reading selections came from the *SRA Reading Laboratory*, IIA; three were at second grade, three at fourth, and three at sixth grade levels of difficulty. The subjects' responses on the attitude inventory were analyzed by the *Generalized Item and Test Analysis Program*, which yielded reliability coefficients of .78 to .96. Three judges scored the nine written products with a median agreement coefficient of .87 for the noncreative task and .58 for the creative task. Analyses of variance showed no differences among the groups on comprehension or attitude in any of the three ability levels. All pupils assigned the

creative writing task produced more words and more modifying elements with a special positive effect on the low group.

Palmatier and McNinch (202) trained four groups of students in notetaking for six one-hour periods and tested the incidental effects on listening. Pretesting included the *Watson-Glazer Critical Thinking Appraisal*, the *Spitzer Study Skills Test*, recall items from a *Taped Note Taking Test* by the investigator, and the *Brown-Carlson Listening Comprehension Test*. Post-tests included alternate forms of the *Listening and Note Taking Tests*. The *Otis Beta Quick Scoring Mental Ability Test* and the *Preliminary Scholastic Aptitude Tests* were given by the school. Five periods were used for testing. There was no evidence of gain in notetaking, but analysis of variance of pretest and post-test scores on the listing test showed a significant F, a gain in listening. An analysis of covariance, however, with the pretest listening test used as a covariate, showed no significant gains in listening. The *Brown-Carlsen* test was criticized because of form equivalence and test-retest reliability. Further analysis of the data showed girls superior to boys in listening; no relationship to intelligence; and negligible relationships to school grades and achievement.

Thames and Rossiter (270) determined the effects on reading rate and listening comprehension using compressed speech as a pacer. Each of 46 subjects was assigned randomly to an experimental or to a control group. The mean percentile rank of the subjects was 72 on the *Lorge-Thorndike Intelligence Test*. Both groups took form Am of the *Brown-Carlsen Listening Comprehension Test* and form A of the *Nelson-Denny Reading Test*. The practice materials were 10 short stories taken from two anthologies used in the school. The stories were recorded then compressed to the desired rates. All subjects read one story per class day accompanied by the tape-recorded version. The control group read the stories; the experimental group read while the taped version was heard, first at 150 wpm, increased by 50 wpm daily to 350 wpm. Then an alternate form of both the reading and listening tests were given. After nine months another form of the *Nelson-Denny Test* was given to 38 subjects. Means of differences between pretest and post-test scores were compared. The experimental group gained significantly (.001) in reading rate, but no differences in comprehension or listening were found. The means of the delayed post-test showed that the reading rate remained superior (.001) to that of the control group.

IV-8 Vocabulary

Swartz and Hall (267) studied the development of relational concepts and word definition from ages five to eleven, using Piaget-type procedures. Specifically, eight sets of questions on right-left discrimination, six sets on kinship relationships, six sets on judgment of comparison, and ten on word definition were used. Half of the subjects at each age five, seven, nine, and eleven years were given the *Peabody Picture Vocabulary Test* before the experiment and half after the experiment. The mean IQ on this test was 114.12. The 10 nouns were chosen on the basis of familiarity, concreteness, and possible differences in definition. Each item in the relational task was scored correct only if all questions about it were answered correctly; all definitions of words were classified. The age level at which 75 per cent or more of the subjects passed each item was recorded. Definitions of words were first classified as concrete, functional, or abstract. The investigators found that the percentage of subjects each item of right-left discrimination increased with age and generally followed Piaget's three stages. Likewise the percentage of subject passing each kinship question increased with age. Using Elkind's brother concept. Stage I predominated at age five; Stage II occurred most often from ages seven to eleven; Stage III appeared at age nine and was not accomplished by age eleven. For the concept of having a brother many eleven year olds had not reached Stage III, and many were at Stage I. Definitions of words were functional from ages five to nine, with abstract definitions predominating at age 11. In addition, concrete definitions appeared at all age levels with fairly consistent proportions. The stages of thinking for each concept were correlated with others and with word definition (ϕ = .18 to .43) although many individuals differed in stage by age.

Mickelson (181) developed a *Table of Meaningfulness (m)* for 14-year-old junior high school students. She used 60 count nouns (e.g., girl, book) and 60 mass nouns (e.g., silk, justice) randomly selected from the *Thorndike-Lorge* list but stratified to include half A (occur 50-100 times per million) and half AA words (occur 100 times or over per million). Subjects of both sexes made single-word, written, free associations to the stimulus word. Criteria for acceptable association had been established earlier by Noble. Inter-marker agreement was 98 per cent. The range of meaningfulness was 12.75 to 5.71 with a mean of 9.75. The same test given to university stu-

dents yielded a range of 14.4 to 7.43 with a mean of 11.7. Along with an earlier study of nine year olds, this study gives some perspective regarding growth in meaningfulness.

Holley and King (129) studied the effects of glossing on learning German vocabulary and on comprehension of the selection read under each condition. Glossing may provide the English equivalent of an unfamiliar word as an interlinear note, in the margin, or in a footnote. Words to be learned or unused words not to be learned are glossed in some texts. A selection was chosen and edited to 750 words. In the control version, all unfamiliar words were replaced by familiar synonyms. In a second version, 25 words were replaced by unfamiliar synonyms; and in the third version, 50 words were replaced. Each experimental version was prepared in three forms: glosses at the side of the page, glosses at the bottom of the page, and word meanings in an attached list. A multiple-choice vocabulary test was the primary criterion, and a comprehension test was the secondary one. A questionnaire, given last, was used to identify native speakers of German or bilinguals, who were rejected. Within the seven classes, students were assigned randomly to the treatments. Analysis of vocabulary tests were not significantly different for the three types of glossing. Neither was there a significant effect of type of glossing on comprehension nor an interaction with the two levels of word density. Cautions are offered for interpreting the findings.

Loewenthal (168) completed three experiments using three techniques to identify words that were known, simply familiar, or unknown. Twelve undergraduates were asked to view 20 words, exposed individually on a tachistoscope for .1 second in the first experiment. Exposure was repeated as many as 15 times; then if unsuccessful, the subject was told the word. The words were nouns taken from one in one million to one in four million of the *Thorndike-Lorge* count. After all 20 words were exposed, each subject was asked to rate each word on a three-point familiarity scale. Median number of exposures for each class of words for each subject were calculated. The mean of the medians showed that the differences were significant between known, familiar, and unknown words. The difference in number of exposures between known and familiar was not large. In Experiment II, the 20 subjects gave word-associations for the 20 words used in Experiment I. Again subjects were asked to rate the words for familiarity. Besides, subjects were asked to give some indication of how they arrived at bizarre responses. The 388 responses

were classified as semantically related (S), phonologically related (P), phonologically mediated (PM) or unrelated (X). The numbers in each category were S-146, P-92, PM-106, and X-44. About 82 per cent of all known words produced S associations, whereas the largest proportion (35.5 per cent) of familiar words produced PM associations, and 41.7 per cent of associations to unknown words were P. Interactions were found between responses, stimulus knowledge, and subjects. Experiment III used the same words each with four choices of responses: S, P. PM, and X. The 36 subjects first categorized the words as known, familiar, or unknown; then they chose one of the four responses most closely related to the stimulus word. The results of this analysis showed highly significant effects of knowledge of stimulus and response type as well as interaction with subjects. Responses to known words yielded 93.7 per cent S; to familiar, 60.1 per cent S; and to unknown words, 50.8 per cent S. In other words, recognition was considerably easier than production of meaning. From the results, a scheme for word processing was proposed.

Winograd and Conn (300) searched for evidence of the way that adults encoded words in isolation in contrast to words in context. In the first experiment, 100 nouns, each having at least three distinct means, (*i.e.*, ring), were chosen from the AA frequency of the *Thorndike-Lorge* word count. For each entry, three sentences were constructed using the homograph differently and subjects rated the usage of the word in terms of their personal frequency—most often, next most often, and least often. If at least 20 of the 30 subjects rated a meaning as most frequent or least frequent, the words were considered polarized. Fifty words were classified as high frequency (HF) or low frequency (LF) polarized. The list and a second list of non-polarized words were identified. The first set of homographs always served as those to be recalled (TBR) and the second set as distractors. The 50 TBR words were exposed successively for five seconds each, with interim time for pronunciation. Each subject then received a list of 100 sentences with the TBR word underlined. For the No-Context group, the 100 words were presented without sentences. In each instance the subject said *yes* or *no*, as to whether the word had appeared in the original TBR group. The 45 subjects, different from the first group, were assigned randomly to three groups: HF, LF, and No Context. Corrected recognition scores were "hit" minus "false alarms." Performance was better by 22 per cent for the HF group compared to the LF group, a difference which was

significant. However, the No-Context group performed as well as the HF group. In the second experiment, the TBR and distractor materials were taken from the 50 polarized words used in the prior study. The 50 words were randomly divided into two sets, each given to half of the 40 subjects as presentation and as distractors. The examiner read the list of 25 words twice; then there was a five-minute filler task, followed by listening to the 50 sentences. The examiner read each sentence, then repeated the test word. Each subject decided if the word was in the original list. The mean corrected recognition for the HF group was twice as great as for the LF group. The results suggested differences in coding of the same nominal event.

Hafner and Weaver (112) examined some physical and semantic properties of words on the *Wechsler Intelligence Test (WISC)* Vocabulary, in relation to error rate in pronouncing the words. Related studies suggested these sources of cues to pronunciation: percentage of ascenders, percentage of descenders, linear words, ratio of letters to phonemes, ratio of letters to syllables, and meaning difficulty of the word. The last was based on the *WISC* rating. The fourth-grade subjects attempted to pronounce each word as it was presented. The error rate correlated with per cent of ascenders .16, with per cent of descenders .07, with linear words .13, with letter-to-phoneme ratio 32, with letter-to-syllable ratio, 21, and with meaning difficulty .77. A stepwise multiple correlation showed that the only important variable was meaning difficulty.

IV-9 Factors in interpretation

Rystrom (229) completed a study with fourth-grade children who used special materials in social studies designed to help define his comprehension model. Children in four classrooms were pretested in October with the *California Reading Test* and the *Rystrom Reading Comprehension Test*. These tests were given again after about 150 instructional days. The experimental materials were prepared by previewing the text to identify items that might not be understood by these pupils and that were important to the understanding of what was presented in the text. The control group had about 500 questions on the pictures in the text. These materials supplemented the teachers' instruction but all were covered in about 45 minutes daily. Analysis of covariance, using the pretest as the covariate and the post-test as the dependent variable, yield no significant differences between the treatment groups.

Feinman (80) hypothesized that literal comprehension was easier than inferential comprehension and tested this hypothesis at second and third grades. Following a pilot study, one short narrative with vocabulary controlled to high second grade was read by four classes of subjects. Six questions, alternating literal and inferential, were answered by choosing among three alternatives. At second grade the per cent of correct responses for literal questions was 90.16 to 95.16; for inferential, from 62.29 to 72.41. At third grade correct literal responses were from 91.48 to 97.87; inferential responses were 59.89 to 80.85. From these data it was concluded that literal comprehension was a necessary but not a sufficient condition for inferential comprehension.

Fareed (78) used retrospective verbalization with 12 sixth graders who read historical and biological materials to identify differences and similarities in the processes reported. The subjects were reading beyond grade level and were highly verbal. Vocabulary in social studies and science was measured by the *Diagnostic Reading Tests*—Section I. All percentile scores were above 72, showing that word knowledge was adequate. Attitudes toward history and biology were determined from the *Remmer's Scale to Measure Attitude Toward Any School Subject*. Attitudes were favorable in both areas with one exception. Two passages were selected and adjusted until judges considered them equal, interesting, and appropriate. Twenty-four questions for each passage covered eight behavioral aspects of interpretation. Each subject had a practice period followed by two interview sessions including the two passages. Each protocol was tape-recorded, typed, and analyzed. A system of analysis was devised and used by judges, then revised until a high level of agreement was achieved. The framework included seven major areas with some subareas, The answers to questions were coded also. Identifiable in interpreting historical and biological materials were reproduction, inquiry, rational judgment, emotional reaction, appreciation, and association. In addition, subject illuminated by comparing, justifying, following sequence, expanding, summarizing, and generalizing. Unique to history were more emotive reactions, rational evaluations, and recap in brief resume; to biology, more scientific associations and illuminations. Special subject-matter vocabulary was negatively related to "inquiry" responses and positively related to association, while attitudes relationships were reversed. Four types of readers were identified: passive-receptive, emotional, aggressive, and associative.

Three investigations dealt with the effects of questions on comprehension and recall. Frase (91) examined the effects of factual and inferred adjunct questions on learning text materials and noted the effects of incentives. He used eight experimental conditions with six subjects each and a 2 (type of adjunct question) x 2 (incentive level) x 2 (incentive position) x 2 (type of recall, either fact or inference) analysis design. Repeated measures of the last factor were processed. The adjunct questions were either factual or inferential. The incentive was extra money for answering post-test questions. The incentive position was either before reading the passages or immediately afterward and before answering the questions. The two types of recall were of factual statements and valid inferences. Three passages were used, each with four experimental text sentences embedded in other material. Knowledge of monetary rewards to themselves or others reduced errors on post-test adjunct questions, improved recall for facts and adjunct questions and facilitated responses to inferential adjunct questions. Incentives were effective when they were given before reading but ineffective when given after reading and before answering questions. The facts in the text were recalled better than the inferences whether the adjunct questions were factual or inferential. Both incentive groups were superior to the group given no incentives.

Watts and Anderson (287) explored the effects of the use of inserted questions of naming, repeating an example, and selecting a new example of a principal set forth. The material included five passages, each about 450 words. Five treatments included a group required to name (N), two groups that repeated an example or application of the principle set forth (RA), and two groups that identified new examples of the principle (A). Five questions, each of the foregoing types, were inserted after each passage. A post-test of 25 questions sampled each of the five types of treatments. Analysis of variance of the performance of each group revealed that all main effects were significant. Post-test performance ranked, from highest to lowest, A group, RE group, and N group means. However, on the inserted questions, the order was reversed with the N group exhibiting almost perfect performance, followed by the RE and the A groups. The time spent answering inserted questions showed direct correspondence to the difficulty of the questions, ranking from shortest to longest, N, RE, and A group performance. There was a decrease in time spent reading successive passages for all groups, but marked

decrease occurred after the first two passages only for the N group. On the post-test, the longest mean time was taken by the control group and the N group, with the RE groups and the A groups performing successively faster.

Sehulster and Crouse (240) investigated the effects of serial position on free recall, as opposed to recall cued by questions, of a 215-word prose passage. The prose was two selections, heavily laden with factual material, each of which had two versions differing only in syntactic form. Twenty-four questions were constructed, each of which could be answered by one or more words from either version of each passage. The questions probed material as it was presented in serial order. All subjects were allowed two and a half minutes to read each selection. Then half of them were asked to recall as much of the information as possible while the other half answered the questions. Responses to questions were scored by determining if each answer was correct. Free recall was scored by determining how many of the questions could be correctly answered by the recall protocol. The mean number of correct response per question was blocked by quarters related to the message read. Recall was significantly (.01) higher for the question-recall than for the free-recall. Also there was an interaction between recall-positions and the recall conditions; questions were relatively more effective than free recall, increasingly so toward the end of the passage.

A number of factors have been investigated because of their possible effects on comprehension. Kerner and Achenbach (149) explored the relationship between scores on the *Children's Associative Responding Test (CART)* and selected tasks requiring verbal and nonverbal responses, including comprehension of what was read and heard. Boys and girls who scored high (high D) and low (low D) on the *CART* were assigned randomly to four experimental groups and tested individually. Each subject took two recall tasks, one obviously clusterable and the other nonclusterable. The second was the paragraph comprehension task which required reading or listening to four paragraphs, then answering three fact-interspersed with three inferential questions on each paragraph. The third was the *Dunn Object-Sorting Task* which compared divergent with convergent thinking. The 75 low D subjects surpassed the 26 high D subjects in nonverbal IQ *(Lorge-Thorndike Test)* and in mean *Stanford Achievement Test* scores; no significant differences were found in Verbal IQ, socio-economic status, or average school grades. There was no

significant difference between the high and low E's on the clusterable and nonclusterable recall items. However, on the comprehension task, low D's scored higher on inferential questions (.05) an nonsignificantly higher on fact questions than did high D's. The low D's tended (.10) to score higher than high D's on both divergent and convergent sorts. On most tasks, girls scored higher than boys. Coefficients of correlation among the clusterable and nonclusterable tasks were much lower for low D's (—.20 to .07) than for high D's (.27 to .68). This difference was interpreted as showing approaches to the two kinds of lists. Three coefficients of correlation between Paragraph Comprehension and final grade average were low (.10 to .19) for the high D's and higher (.52 to .64) for the low D's. The conclusion was reached that associative responders use the same approach to school tasks as to serial recall while nonassociative responders use the same approach as to comprehension and concept formation tasks.

Chopra (52) replicated the study on silent speech and silent reading done by Edfeldt, using different techniques of measurement, with special emphasis on intelligence, silent speech, and comprehension. The subjects were 20 boys selected from a population of 117 in terms of their IQ ranges. The test used was *Intermediate Test D, ACER*, Melbourne. The IQ ranges were Group A, 111-120; Group B, 101-110; Group C, 91-100; and Group D, 81-90. The device for measuring silent speech used plastic bulbs placed on either side of the tongue which conveyed slight movement. The rheostat was adjusted to produce a base reading of 6 m/amps on the meter. During 2.5 minutes of rest, the highest m/ammeter readings during each 30-second interval was recorded and was called Condition 1. Condition 2, for 2.5 minutes, was silent reading of simple text. Condition 3 used difficult text, and Condition 4, blurred text. The following day, all subjects took the *ACER Silent Reading Test*, Form C, Reading for Meaning. The mean defection scores were analyzed by analysis of variance, and group effects were significant. Individual group comparisons revealed significantly more (.05) silent speech in Group D than in Groups A and B. Further analysis revealed no difference among groups in the "rest" condition. However, in each of the reading tasks—Conditions 2, 3, and 4—there was significantly (.05) more silent speech in the lower IQ groups (C and D) than in the upper IQ groups (A and B). Examining the mean deflection scores for conditions averaged over intelligence groups, there was significantly more (.01) silent speech in each of the three reading conditions

than in "rest." More specifically, for all except Group A, there was significantly more silent speech (.01) under each of the reading conditions than in rest, but no significant differences among reading conditions. However, in Group A, the silent speech under difficult and illegible conditions was significantly (.01) greater than under easy and rest conditions, and there was no difference between the last two. When IQ was held constant, there was a low positive (.3) but insignificant correlation between reading deflection scores on the easy text and the scores on the reading comprehension test.

Anderson, Goldberg, and Hidde (7) compared learning from identical sentences with and without the last word omitted to determine the effect, on learning, of forcing semantic encoding of the sentence. In the first experiment, 24 sentences were prepared with the last word contingent on the meaning of the sentence. Half of the subjects read aloud the complete sentence and half had to guess the last word and write it on the blank. Then the subject noun was presented as a retrieval cue, and each student responded with the last word in the sentence. Three trials were given. The Blank group exceeded the No Blank group on the first trial (.01) but not on the second and third. Experiment II was designed to determine if the transfer effect could account for the differences found. Three lists of additional sentences were constructed and normed. However, both a forward test trial (subject noun to recall last word) and a backward test trial (last word as cue to subject noun) were given. The Blank group scored significantly higher (73.8 per cent) than the No Blank group (61.7 per cent). This finding appeared to rule out the transfer effect and support semantic encoding.

Anderson and Kulhavy (8) investigated the effects of instructing students to use mental imagery while reading, on responses to short-answer and multiple-choice questions. The 62 high-school seniors read the 2,190-word prose passage, either with or without prior instruction to form a vivid mental picture. Thirty-four short-answer questions and the same number of completion items required both specific (names etc.) and general replies. Each subject was timed while he read, took both tests, and completed a questionnaire of nine items about his study strategy, carefulness, and interest in the materials. Analysis of variance of post-test scores showed no significant effects of instruction to use imagery nor to the type of test, nor any interaction of the two. The results from the questionnaire showed that more than half of the control group used mental

imagery while about a third of those instructed to do so did not use it. An analysis of the mean per cent correct as a function of the amount of imagery used indicated that number of questions answered correctly was directly related to the amount of imagery reported.

Oakan, Wiener, and Cromer (195) examined the effects of word identification and the organization of words on the reading and listening competence of good and poor readers in an effort to explain some of the elements of comprehension. Half of the 96 subjects of the study scored at least one and a half grades below fifth and half at or above fifth grade on a standardized (unspecified) test of reading comprehension. Half of these subjects were assigned to Part 1 and half to Part 2 of the study. All subjects had IQ's between 90 and 110 on an Otis test given at fourth grade. Four reading passages were adapted from standardized tests "appropriate to the fifth-grade level," and comprehension was measured by five multiple-choice questions on each passage. In Part 1, each subject read a set of stories to establish a base line. Then each poor reader was trained to identify each word occurring in a second set before they read it. Thus good visual input was established. For comparison, poor visual input was provided for good readers by transcribing the taped records of poor readers reading the passages aloud. Part 2 dealt with organization and listening rather than with reading. The input material came from tapes of four poor readers in the fifth grade. The reading was "replete with errors," but the experimenter corrected the reader saying the appropriate word(s) aloud. The identification of words was intact, but the organization was disrupted. Also, each good and poor reader listened to recordings of good readers in which both identification and organization was intact. The data analysis was based on comparisons of the number of questions answered correctly on each of the two pairs of stories. Analysis of variance included two modes of input (auditory versus visual), two types of input (good versus poor), with good and poor comprehenders. The good readers answered significantly (.001) more questions correctly than poor readers. The effect of mode of presentation was not significant. However, the good readers answered more questions on the visual mode than the auditory, while no difference was found for poor readers. The interaction of Group X Mode X Input was significant (.001). The good readers scored highest under good visual input and the poor readers under good auditory input. Identification training resulted in no apparent increase in comprehension for poor readers, and good

readers scored relatively less well under conditions of poor input. The mean for poor readers under poor auditory input was quite similar to the means of good and poor visual input. The conclusion was reached that an appreciable amount of difficulty of poor readers may be in organization of input rather than in recognition.

Kintsch and Monk (154) reported three experiments designed to determine whether verbal information is stored in abstract semantic form or verbatim. His subjects were college students as follows: Experiment I, 60; Experiment II, 32; and Experiment III, 28. In Experiment I, two versions of each of four paragraphs were written. Each paragraph used either a simple syntax with a string of simple sentences explaining the underlying proposition, or all conceivable syntactic and semantic transformations to generate one long complex sentence to set forth the same proposition. Filler paragraphs were constructed and used to avoid recognition of a pattern. Each paragraph contained 46 words, followed by a six-word question requiring an inference to be answered *Yes* or *No*. Subjects read only one version of a paragraph, but the versions of the four paragraphs differed. Half of the subjects paced themselves, but time for reading and time for answering the question were recorded separately. The other half was given restricted reading time of 10 seconds, then what time the subject needed to answer the question. The investigators found that reading time for the complex versions was about 12 per cent longer than for the simple versions, although the four problems themselves were not well equated. However, inference time (to answer questions) did not differ significantly for the complex and simple forms. Inference times and reading times over subjects were correlated negligibly (average .123). In the timed condition, fewer correct answers to the inference questions were obtained. Experiment II differed in that 20 paragraphs concerned different subject matter also differing in length (24-70 words + punctuation marks). The types of inference called for also differed (comparison, classification, etc.). Two versions of each paragraph were read. The results showed a significant effect of complexity on reading time (.01), complex paragraphs requiring about 14 per cent longer than simple. Inference times again were equivalent. The length of the paragraphs correlated .66 and .50 respectively with reading time and inference time. In Experiment III, the material was syllogistic arguments. Twelve arguments, each on a different topic, were prepared. The in-

ference question required the conclusion. Each argument, valid or invalid, was constructed in two versions. Again the effect of complexity on reading time was significant (.025) and larger (28 per cent) than before. Also, response time was independent of complexity. The conclusion was reached that information was stored in these experiments in abstract semantic form.

Johnson (142) studied the effects of reading and punctuation variations on reading comprehension when it was measured by an oral noun cloze test, time for reading the passages, and time required for the oral tests. The Bormuth passages 4, 8, 12, and 16 were used with fifth-word deletions until 20 nouns were omitted. The 48 subjects were assigned to 12 conditions: test punctuated or unpunctuated; read silently, orally, or marked end of sentence; and passage punctuated or unpunctuated. The test was always read aloud regardless of the reading or punctuation conditions. Time was recorded for oral and silent reading, and students tapped a plate at the end of each sentence or where they thought a sentence ended in the unpunctuated text. Only the exact deleted word was counted correct. Analysis of variance of cloze scores, reading time, and cloze test time showed a significant effect in the difficulty of the passages. Oral reading mean time was superior to silent reading time. Analysis of total reading time revealed significant differences in both difficulty of passages and punctuation and an interaction of these two. Analysis of total testing time showed only a significant difference in level of difficulty. Trend analysis for cloze scores reading and testing times were significant (.01). The difficulty of the passages did not support Bormuth's rating. They ranked 8, 16, 12, 4 in difficulty with the nouns deleted. The findings show that lack of punctuation reduces reading speed significantly.

Wong (301) investigated integrative reconciliation (structuring materials to promote comparison and contrast) using three treatments of two essays. The two essays expressed two points of view on the same subject matter. The treatments were basic core essay; basic core with verbal prompts to make comparisons and contrasts; and basic core plus paragraphs making comparisons and contrasts. The 84 college subjects read the first essay, then were randomly assigned to the three treatments for the second essay. Then all subjects took an immediate recall test specifically relevant to the first or second essay and took the same test one week later. The basic

data included correct responses and intrusion errors (answers ascribed to the wrong essay). The reliability of judging number correct was .97 and of intrusion errors was .89. Analysis of variance of number of correct responses showed no significant treatment group difference and no significant interactions involving treatments. Effects of questions keyed to the first and second essays were significant (.01), favoring the first. The delayed responses were significantly lower than the immediate responses. Analysis of variance of intrusion errors showed significant (.01) group differences, with the Group 1 mean of .795, Group 2, 688, and Group 3, 402.

Three studies of critical reading in relation to critical thinking are grouped together because the same data are analyzed differently in each study. The purposes of the three studies were to determine relationships between critical reading and critical thinking. Follman, Lowe, and Wiley (86) selected 57 students to represent a range in reading achievement at grade 12. The following tests were given: the *Martin Reading Comprehension Test (CR)*, *Test of Critical Thinking (CT)*, the *Nelson-Denny Reading Test (READ)*, and the *Lorge-Thorndike Intelligence Tests (IQ)*. Before taking these tests, all subjects had taken the *Florida Statewide Twelfth Grade Tests*. Subtest, as well as total test, scores were intercorrelated separately. Principal components factor analysis and *Kaiser Varimax* rotation of all factors with eigenvalues above one were calculated. The magnitude of various coefficients was discussed but cannot be summarized readily. However, the factor analysis yielded seven factors: 1) a general factor accounting for 46 per cent of the total variance, 2) a non-verbal variable, 3) critical reading activities, 4) critical thinking activities, 5) language categorization activities, and 6) and 7) uninterpretable. Rotation sharpened the factors. The general factor was loaded by fewer tests and emerged as a verbal factor, largely vocabulary. The second factor had loadings from the non-verbal IQ tests and mathematics. Factor 3 was composed of all five *CR* subtests, three *CT* subtests, and a few others. It shows a distinct relationship between critical reading and critical thinking. Moreover, critical reading was distinct from verbal ability, reading ability, and probably from intelligence. Factor 4 appears to involve language interpretation and categorization, and Factor 5 involves language. Factor 6 had strong loadings on two *CT* subtests, both hypothesis verification. Factor 7 had strong loading on *CT* subtests, pertinent information.

Factor analysis of the total scores on the tests showed a general factor accounting for 74 per cent of variance, probably representing language variance. But rotation split the factor, one part of which included *CR*, *READ*, and *CT*; the other consisted of *IQ*, *CT*, and *READ*. Thus *CR* and *CT* have common and unique elements.

The second statistical analysis of the foregoing data was reported by Johnson, Follman, Wiley, Lowe, and Miller (144). The analysis was done with canonical and partial correlation of critical reading (CR) and critical thinking (CT) test scores. With verbal IQ partialled out, low and insignificant relations were found except between CR and CT (.23). Likewise, first order partial correlations with reading removed were slightly larger than with IQ removed. Three multiple regressions and part correlations showed: of the 53 per cent of total variance, 4 per cent is unique to CT, 11 per cent is unique to verbal IQ, and 38 per cent is joint. Similar relationships among others led the authors to conclude that verbal ability is a necessary, and perhaps sufficient, condition for CR and CT. The second order partial correlations confirm the relationship shown above. All canonical correlations between sets of subtests were high, ranging from .68 to .93. They merely confirm the interrelatedness of CR, CT, reading, and IQ.

The third report by Lowe, Follman, Burley, and Follman (169) examined item difficulty and discrimination indices, reliability estimates, inter-item phi coefficients, and principal components factor analysis to determine the dependability of the tests and subtests, and to examine their interrelationships. Mean item difficulty and discrimination indices were .42 for both CR and CT. A few items for each measure did not discriminate. CR reliability was .92 and CT was .87. Subtest reliabilities of CR ranged from .53 to .76; for CT, they ranged from .20 to .69. Factor analysis of the 50x50 inter-item phi matrix and the rotation showed that two factors were involved in the test. Point biserial correlations between each item and total score had a median of .467. The conclusion was reached that many items are measuring the same construct. However, CT items were found to represent different underlying abilities that correlate low with each other but high with the overall CT score. A factor analysis of the 102x102 item matrix and the rotation revealed a number of small group factors, usually unique to CR or CT variance. Factor analysis of the 50x50 CR items led to the inference that the

thinking activity involved judging verbal material in true-false and multiple choice form for accuracy of synonymic meaning to other verbal statements or passage materials. CT was far less clearly defined but was a composite of judging how statements relate to conclusions, interpretations of verbal statements, and recognition of assumptions.

IV-10 Oral reading

Two studies dealt with childrens' perception of teachers' oral reading to pupils. In the first, Johns (139) used a questionnaire to determine the extent to which teachers read to middle-class white pupils and to inner-city Negro pupils and their attitudes toward their teachers' reading. Subjects came from 12 classrooms including 112 children in two suburban schools and 234 in two city schools. Teachers read the two questions to their pupils who circled either *yes* or *no*. To the first question, "Do you like to have your teacher read stories or books to you?" inner-city children gave 155 affirmative and 79 negative responses, while suburban children gave 95 positive and 17 negative replies. The difference yielded a chi square of 11.99, significant at the .01 level. To the second question, "Does your teacher read stories or books to your class?" the yes-responses were 152 versus 82 no-responses for inner-city children; comparable responses for suburban children were 104 to 8. The chi square of 18.85 was significant (.01). Thus, the conclusion was that suburban pupils of fifth and sixth grade were read to more frequently and like to be read to more frequently than did inner-city children.

Johns and Read (141) replicated the foregoing study with fifth and sixth graders from four public school systems located in two states. The 400 subjects were equally divided between five classrooms of the inner-cities and five suburban classrooms. Their responses to the first question were inner-city, yes-122, no 78; suburban, yes-174; no-26. The chi square of 33.78 was significant (.01) again. However, in response to the second question, inner-city children marked yes—144 and no—56 while suburban children marked yes—154 and no—46 with no significant difference. The conclusion that suburban children were read to no more frequently than inner-city children disagreed with the findings of the previous study. However, both agreed that the suburban children said that they enjoyed having their teachers read to them in greater proportions than did inner-city children.

Brown and Miron (35) tested the predictions of pause time in oral reading on the basis of linguistic analyses of the text. They used the 1,537 word "Meteorology Message" in its professionally read rendition paced at 164 wpm. While previous analyses of this protocol had emphasized a conglomerate of speech performance, or single sentences, this study focused on the larger ideational and contextual units. Pause, which was studied, was defined as all disjunctures in phonation that fell between corresponding successive lexical items. The original tape was recorded at half-speed. Using the ear to distinguish real pause, the oscillographic tracings were interpreted. To study the lexical items in context, every fifth word was deleted in a cloze procedure with five overlapping versions. Because of the length of the message, each subject read and replaced words in only half of it. Thus the 120 subjects were grouped into 10 conditions, and the final data excluded all but 10 responses. In this way it was possible to relate the immediate constituents (IC) of each of the 84 sentences and the deep structure analogue (DSA) to the pauses. Other independent variables were *Structural Complexity Index (SCI)*, the log of the number of different lexical types of responses elicited by a particular deletion point (HTREL), H, HREL, and T. A total of 650 actual pauses of five msec. or greater duration were discovered, and they were the criterion variable. Following a correlational analysis, a stepped multiple regression was completed in which all seven independent variables were entered. The first variable, IC, accounted for more than 55 per cent of pause time. The second, DSA, increased the R^2 to 61 per cent. The third, SCI, added only two per cent, and all others increased the total variance accounted for to only 64 per cent. While major predictive value of pauses comes from surface structure, deep structure is also an element in determining pause time in extended oral reading.

Shapiro, Anastasiow, and Hoban (242) investigated the hypothesis that mature reading is selectively using semantic and syntactic cues and reaching a conclusion based on them. The subjects were 23 fourth graders. The material was two randomized lists of 23 statements each containing an ambiguous word *TAK* or *SOK* in the initial position. The *SOK* sentences included surrounding words which contained context with stronger cues than did the *TAK* sentences. Subjects read each sentence silently then read it aloud. The *t* test for correlated means showed that the mean correct pronunciation of

the *SOK* words was significantly (.05) higher than of the *TAK* words. Furthermore, performance on this test correlated .43 with the *Iowa Test of Reading Comprehension.*

Dooling (70) investigated the effects of different types of context on the speed of comprehension of a sentence. All experimental variables were within subject (S). The variables were (A) Task: Task 1) reaction time as to whether the target sentence was meaningful or anomalous; Task 2) reaction time to judge whether or not the target sentence followed appropriately from the preceding context; (B) Context: Word context was one or two words from the target sentence and sentence context consisted of one or two words from the target sentence (for Task 1, there was a no context condition also); (C) Linguistic focus: the context highlighted the subject, main verb, or subject plus another word; and (D) Sentence type: sentences of four different grammatical structures were used. There were seven blocks of trials for each session of Task 1 and six for Task 2. Each block consisted of 18 trials with 12 *Yes* and 6 *No* responses expected. The *No* responses were discarded as they were used only for foils, so context was appropriate to all trials analyzed. The major statistic was repeated-measures analysis of variance of the four variables. Two main effects were significant: linguistic focus (.01) and sentence type (.001). Neither context nor task showed a main effect. Context interacted differently in the two tasks. In Task 1, comprehension time decreased as context increased from none to one to two words. In Task 2, longer contexts resulted in longer times for matching sentence meaning to preceding context. Linguistic focus variables revealed that subject and verb yielded identical mean comprehension times (1.01 sec) while two-word contexts required less time (.93 sec). Analysis of sentence type revealed that sentences with most complex deep structure required longest to comprehend. Also, reaction times were longer for more words. A comparison of inappropriate and appropriate contexts revealed the latter to be more effective, but a misleading word had a greater negative effect than a misleading sentence.

Rodenborn (220) investigated the growth patterns of auditory-visual integration (AVI) and examined its predictive value in relation to auditory and visual memory as well as IQ when oral reading was the criterion. Reading accuracy was measured by the *Gilmore Oral Reading Test;* auditory memory, by four sets of digits for each of six series lengths, two through seven digits; visual

memory, by a constructed test similar to the Visual Memory-Primary subtest of the *Durrell Analysis of Reading Disability*. The visual memory test used series of consonant letters ranging from one to seven. The AVI test was similar to that of Birch and Belmont but included 24 items in which long, short, and mixed tones were recorded at 1,000 cycles per second. Subjects selected dashes and dots, and long and short sounds from their visual equivalents and two foils. Subjects were 30 children, equated for sex, at each of the first six grade levels, who scored within one standard deviation of the mean on the *California Test of Mental Maturity*. The split-half coefficients of reliability ranged from .87 to .92. The AVI scores were plotted by chronological and mental ages and both appeared to be a straight line function with no plateau by sixth grade. AVI appeared to improve linerally up to the beginning of sixth grade oral reading scores. Coefficients of correlation of the variables with oral reading showed mental age highest (.74). Thus the three constructed tests were regressed with mental age to predict oral reading scores. Adding AVI increased the prediction from 55 to 58 per cent; auditory and visual memory each added 3 per cent; the total of 64 per cent of the variance was accounted for by this battery.

IV-11 Other factors related to reading

Muise, Le Blanc, and Jeffrey (187) tested the speed of letter reading of five levels of approximation to English and French texts to explore interaction with past language habits. The subjects were monolinqual English students just beginning a course in French. It was expected that subjects would require less time on the higher orders of approximation to English. The samples were randomly chosen sentences from the same English and French text. Five orders of approximation ranged from no similarity, 0, to the fifth, the text itself. In each language, 240 letters were read from each five approximations. The time for reading 240 letters was the dependent variable. Analysis of variance revealed that order of approximation was the only significant variable. All orders differed significantly (.05) for each language except the third order and the text. Thus it appeared useless to extend approximations beyond the third order. The mean time to read the letters in each language at each order of approximation was plotted, and the resulting curves were highly similar, even overlapping at one point. The results do not support the

hypothesis that speed of letter reading is a function of past experience with the English language.

Weaver, Kingston, and Dinnan (289) investigated the constraints imposed by the word class of a deleted word in a sentence and the distribution of words that can occur at a particular word class deletion. The former, called horizontal, and the latter, called vertical, interactions were examined. The college women were competent readers. A cloze-type procedure was used with 10 sentences in which only one lexical word was deleted and each subject asked to supply all possible words that made sense in each deletion within three minutes. In five sentences the first word of the subject's previous list, and in five, the last word of her previous list, was included in the production lists. These supplied words cued the remainder of the responses. The number of exact duplicate responses in the two lists and the position of the response (first or last half of list) were analyzed. The total sum of fluency scores of subjects revealed no significant differences between subject production when no stimulus word was presented in the position of the deleted word, when the first word of a subject's own association list was placed in the position of the deleted word and when the last word from her association list was so placed. Contingency tables for first and second lists were presented for the reverse and forward association. Differences were significant (.01) and the first list shows the stronger relationship between items from the first list appearing first or last on the second list.

Sassenrath (236) determined the effects of varying systematically the pre-feedback and post-feedback intervals from immediate to seven days on the retention of prose materials. The 390 sixth-grade subjects had a mean IQ on the *Lorge-Thorndike Intelligence Tests* of 109; mean grade level on the *Comprehensive Tests of Basic Skills:* Reading was 7-0. Subjects in the 16 classrooms were assigned randomly to 16 treatments. The four pre-feedback intervals were immediate, four hours, one day, and three days. The four post-feedback intervals were immediate, three days, five days, and seven days. The prose selection was an essay of about 1,000 words on which a 20-item multiple choice test was constructed. Subjects read the selection and marked their answers with a red pencil. Either immediately, four hours later, one day later, or three days later, the tests were returned to each subject, the questions were read aloud, and the correct answers were marked in blue pencil. Then either immediately, three,

five, or seven days after this feedback, the delayed retention test was given. Thus the design for analysis was 4x4, with reading achievement as the covariate. There were no significant differences for pre-feedback or post-feedback or interaction effects. However, the effect of post-feedback retention interval was significant (.01). This effect was accounted for by the immediate group which had the highest mean. The results suggest that immediate or slightly delayed feedback on examinations and papers is preferable to a long delay and results in better immediate retention but not for a longer period of time.

Samuels and Chen (234) hypothesized word recognition strategies which might distinguish adults from children, designed tests of the strategies, and compared performance of 25 college students with 25 fourth graders. Speed of word recognition was measured by a two-channel tachistoscopic presentation of 10 word pairs. The first word was the stimulus and the second the target; only speed of recognizing the target was included. The word recognition strategy test was composed of adjective-noun word pairs. The first word was typed, but the letters of the second word were typed under three conditions: 1) first letter only, 2) first and second letter, and 3) first and last letter. All missing letters were marked by a dash. Five treatments were used in speed of recognition: 1) facilitation, 2) interference, 3) neutral, 4) control 1, and 5) control 2. These conditions were exposed in succession, but the order was randomized. The first word was shown for one second; then the subject read it aloud. After the target word was flashed, an erasing image was flashed for one second. The target word was shown first for 10 milliseconds, and increased 2.5 msec. each time through the list. After each exposure, the subject indicated his response certainty on a three-point scale from certainty to guess. The entire list was shown until all words were recognized twice. The average exposure time of first and second correct report was used as speed of recognition. The investigators found that adults were significantly faster than children under all five treatments. In addition, adults reported a significantly higher portion of partial perception than children. When the response was correct, there was no difference between adults and children in response certainty. However, when incorrect, more adults reported guessing (.001).

One investigation examined the characteristics of "superior" readers compared to "average." A record form was devised to secure

information from 34 items which might discriminate between the two groups. Berry, Fischer, Parker, and Zwier (24) had teachers rank students in reading performance in grades two through eight. Those in the upper quartile were called *superior* while those in the third quartile were called *average* readers. These two groups of 54 each were interviewed individually to obtain information for the record form. When children did not know about items, parents were asked. Identifying data came from school records. The *t* test and the chi square were used to determine significant differences (.05). Combining all grades, three significant differences were found: 1) fathers of superior readers had higher educational levels, 2) superior readers spent more time away from home, and 3) more superior readers had been accelerated in school. Furthermore, at second grade, educational and occupational levels of mothers of superior readers were higher, and superior readers saw more movies, while average readers reported greater use of their library cards during the week prior to the study. At various other grade levels or combination of grades, differences indicated greater social, cultural, and independent activities by superior compared to average readers.

IV-12 Factors related to reading disability

Bakker (16) investigated the relationship between temporal order perception (TOP) and reading, using four different population samples, as a possible factor in reading disability. In previous studies TOP had been: Verbally-imitating (VI-type), nonverbally-imitating (NI-type), verbally-explicating (VE-type), and nonverbally-explicating (NE-type). Significant relations to both reading and speech had been found only between the verbal (VI and VE) types of TOP. Bakker carried out an experiment with 412 nursery school children, median age of 6.3, using two tests called temporal order visual-visual (TOVV) and temporal order auditory-visual (TOAV). Pictures were shown singly on cards; then each subject was given a card with all of the pictures from which he would point to the one selected first, second, etc. There were 10 series in this TOVV group. The same items were used in TOAV except that the pictures were named aloud by the examiner and the selection of order was visual. In addition, an intelligence test *(Drenth, Petrie, and Bleichrodt)* was given. Analysis of variance of TOVV scores showed only the age to be significant with older pupils surpassing younger ones. Sex differences were not significant. With TOAV, age, sex, and their inter-

action were significant. Girls and older pupils scored higher. TOAV was also studied at three age levels, 6.3, 7.3, and 8.3 years. Age continued to be significant (.005), and sex differences appeared in the six- and seven-year-old group but not at age eight. Coefficients of correlation revealed that TOAV correlated higher with reading ability than did TOVV. Multiple correlation was about equal to that of IQ and reading. In a second study, Bakker used 175 normal pupils from ages seven to eleven and 75 reading-disturbed boys ages nine to thirteen. For this group letters were used instead of pictures, and they were presented under visual, haptic, and auditory conditions. In each condition, three letters were presented in temporal succession; two letters were presented later for the pupil to identify their order as first, second, etc. Letters were cut into a square piece of wood for visual and haptic presentations; subjects were blindfolded for the haptic. All main effects for normals were significant: age (.003), sex (.025), and sensory mode (.001). Only age and sex interacted. Visual and auditory inputs were superior to haptic, strikingly so after age eight. For reading disturbed boys, both age and sensory mode were significant. Visual and auditory inputs were similar, and the haptic lower. The recall curve for girls reached a plateau after age eight, with boys after age 10; with learning-disturbed boys, however, it had not reached a plateau by age 13. The same subjects were used to determine the relationship of TOP to reading. Reading was determined by Siegersma (presumably a test) and IQ came from four subtests of the *Wechsler Intelligence Scale for Children*. In analysis of variance, reading ability, age and IQ were treated as independent variables and TOP as dependent; normal and learning-disturbed were treated independently. The separate analysis for boys and girls showed very different patterns. Comparison of normal and retarded boys showed that at age nine, reading disturbed performed on TOP much as seven- or eight-year-olds; and by 13 years, retardation is four or five years. With intelligence eliminated, normal boys continued to surpass reading retardates in visual (.01), haptic (.025), and auditory (.005) TOP scores. Of special interest was the fact that no relationship among girls between TOP and reading could be found for any sensory input, while the relationship in boys was especially strong in the auditory input. From the data, critical-phase models were constructed. Hemispheric specialization was proposed as a basis for the findings. Another study was done with seven- and nine-year-old normals and reading disturbed. Tactile stimulation of two or

three fingers, out of sight, was given. Subjects indicated which fingers were stimulated and the order. All groups performed significantly (.05) better with their left hands. Hand preference was tested also and a relationship was shown to TOP performance.

Symmes and Rapoport (269) explored selected common characteristics of 54 retarded readers selected from 108 thought to qualify. In an attempt to study children with no known or anticipated etiology, referrals were solicited requesting IQ above 95, no neurological symptoms or history of disturbances, and no primary emotional problems. Of those referred, 40 were excluded by initial screening: 3 normal readers, 19 neurological high risks, 8 low intelligence, 6 primary emotional disturbance, and 4 with hearing loss in the speech range. The 68 children were given psychological, neurological, audiological, and psychiatric examinations. Another 14 were eliminated. For those remaining, the *Wechsler Intelligence Test (WISC)* and the *Illinois Test of Psycholinguistic Abilities* were given along with others unnamed to provide a total of 76 scores. The descriptive report given suggests that poorest *WISC* performance at all age levels was on Digit Span, Coding, and Arithmetic subtests, interpreted as sequencing of input. Comparison of spatial with verbal and sequencing group performance again revealed greatest difficulty in sequencing. Over the ages included here, the shape of the profile remained constant. Tests requiring visual recognition and three-dimensional space visualization were reported to be superior. Only one girl was in the final group. All children appeared to have positive mental health and solid parental support. The results are interpreted to suggest a genetic explanation for the reading difficulties.

Otto, Canman, and Jensen (200) examined the influence of reading on achievement test performance of disabled, disadvantaged readers. The subjects were 52 boys and 38 girls in sixth grade. IQ's were determined by the *Kuhlman-Anderson Measure of Academic Potential* given in fifth grade. *The Stanford Achievement Tests*, Form Y, were given under standard conditions in November. In May they were given under three conditions (called treatments): Group A—all directions and items were read to subjects and they were given unlimited time to complete each section; Group B—same as A except time limits were observed; Group C—subjects read the test and were given unlimited time to complete each section. Mean raw score gains were the dependent variable while treatment (3), sex (2) and Ability Level (high and low IQ) were independent variables in analy-

sis of variance. Groups A and B gained significantly more than C on Paragraph Meaning, but no differences between Groups A and B suggests that time for answering was not important. In social studies, combined Groups A and B surpassed Group C. No differences were found in Arithmetic subtest scores. No significant sex differences were found and none for high or low IQ. The conclusion reached was that present achievement tests measure reading rather than content and are invalid for poor readers.

Eakin and Douglas (72) explored the relationship between behavior that is automatic and oral reading of fourth- and fifth-grade boys who were average and poor oral readers. The pool of subjects was nominated by teachers as being good or poor oral readers. The final selection from the pool included subjects with *Henmon-Nelson Test of Mental Ability* IQ's ranging from 105 to 120. *Gates Reading Survey* scores were converted to local percentiles and compared to IQ percentiles. The poor readers had IQ percentiles higher than reading, and the control group had the reverse relationship. To insure that the problem was not comprehension, all boys were eliminated whose comprehension was one or more grades below their own means on the *Gates* test. The resultant groups were matched (t-test) in chronological age and IQ, but the mean reading score of good readers was 6-1 and of poor, 5-0. Cognitive tests which had been identified previously as loading on positive and negative poles of automatization were given. Automatized tasks were Speed of Naming Repeated Objects (pictures), Speed of Naming Repeated Color Hues (Stroop Card B), and Word-Color Interference (Stroop Card C). Non-automatized tasks were *WAIS Block Design Test* (time for designs 3, 4, 5, and 6); *Porteus Maze* (number of wrong alleys entered in eight mazes); and *Children's Embedded Figures Test* (number of correct figures). Comparisons of the mean scores showed that good readers surpassed poor readers significantly (.01 or better) on all three automatized tests, while there were no significant differences on non-automatized tests except that poor readers scored higher (.05) on the mazes.

Croxen and Lytton (62) investigated the incidence and association of finger localization and right-left discrimination among third-year junior school children in England. They used 82 subjects in the experimental group, all of whom had reading quotients (RQ) of 80 or less on the *National Foundation for Educational Research Sentence Reading Test 1*. An equal number of pupils with RQ's above

80 and matched for sex, age, and socio-economic status comprised the control group. Two types of tests were given to both groups: finger localization, and Right-Left Discrimination Tests similar to *Belmont and Birch*. Three types of finger localization tests were used: visual (child sees finger touched and points to it on a diagram), tactual (same except hands not visible), and tactual pairs (same as tactual except pairs are stimulated). The number correct for each hand for each of the three subtests was recorded. The differences between mean scores of the two groups were tested by the *t* test. Significant differences (.05 or better) were found, favoring controls, among boys, girls, and the combined sexes on finger localization. Among all groups the visual exposures were easier than the tactual and the tactual easier than tactual pairs. Another test of the difference was to identify all pupils who scored low on the finger localization tests (43 or less) and compare RQ's with those of the total group. The investigators found 13 experimental and six control boys, along with three experimental and one control girls in the low group. Means of the experimental RQ's were consistently lower than the whole group but no statistical tests were reported. Right-left discrimination was significantly lower for experimental boys and girls than for controls. In the part-sample where nonverbal IQ was available, finger localization and right-left discrimination correlated .408; with IQ partialed out, the coefficient was .356. Both were significant.

Noland and Schuldt (194) studied the comparative responses of retarded versus normal readers in sustained visual attention, called vigilance. The subjects were 20 fourth graders whose reading scores on the *Metropolitan Reading Test* were one or more years below their school placement (retarded group), and the same number who scored at or above grade level. All subjects scored within the normal range on the *Kuhlmann-Anderson Intelligence Test*. The groups were matched by age, grade, sex, and IQ. Mean reading grade of the retarded group was 3.02 and of the normal, 5.42. In the experiment, each subject watched a target for a light which flashed behind an aperture for two hundredths of a second. The subject's task was to press a button as soon as he perceived the light. Scores were the number of correct stimulus detections and the response latency time of correct detections. Each block of 30 minutes was subdivided into 10-minute intervals to determine sustained attention over time. A trend Analysis of Variance showed a significant difference (.025) in overall detection with normals surpassing retarded readers. Differences in detec-

tion over successive trials were significant, but the decrease appeared in both groups without significant differences. Furthermore, there were no significant differences between the groups in latency which increased equally in the two groups over trial blocks. Inspection of the data revealed that retarded readers appeared to lose attention early. The first two stimuli were accurate for both groups. Thereafter, poor readers missed 35 of the remaining 160 while good readers missed only 15.

Bell, Lewis, and Anderson (21) investigated the relation of personality and motivation to reading retardation using objective tests and controlling for intelligence. The subjects were 100 equally divided between Negroes and Caucasians; each racial group included 25 adequate and 25 inadequate readers. The adequate subjects were reading within six months of their chronological ages based on the *Iowa Tests of Basic Skills*, while inadequate readers had a reading age two or more years below chronological age. All subjects had an IQ of at least 80 on the Performance Scale of the *Wechsler Intelligence Scale for Children (WISC)*. The following variables and tests were reported: Reading—Average of Reading and Vocabulary Subtests of the *Iowa* (average subtracted from *WISC* to determine discrepancy); Personality—*The High School Personality Questionnaire (HSPQ)*; *The School Motivation Analysis Test (SMAT)*; the *WISC* verbal subtests; mother's and father's educational achievement; number of children in the family; number of persons living in the home; the *McGuire-White* total socio-economic score; *Lincoln-Oseretsky Motor Development Scale*; *Bean Symbol Substitution Test* (similar to *WISC* coding); Visual Memory subtest of the *Durrell Analysis of Reading Difficulty*; *The Myklebust Total Words Count*; and race. The data were gathered from school records and from the students through interview and testing. The 43 variables were factor analyzed resulting in 15 independent factors. Of these, five factors were associated with reading deficit, with a loading of at least .200 on each factor. Factor I was called a verbal deficit, showing highest negative loadings of five *WISC* subtests. Factor III was called Aggressiveness. Highest loading on this factor were *HSPQ*—Excitable, and *SMAT*—Aggressive. Factor VI was called the Caucasian Reader because race loaded on it and because there were significant differences between races on the other variables. It included the *Myklebust*, and the *HSPQ* Tough, both with negative loadings. Factor V was called low socio-economic status since father's and mother's education appeared

negatively loaded on this factor and the *McGuire-White* total score loaded positively. The *SMAT*—Fear and *Durrell Visual Memory Tests* also appeared toward the lower end of the factor loadings. Factor XI was called Passivity since the highest loadings were *HSPQ*—obedient, calm, and phlegmatic. Also on this factor were the *Lincoln-Oseretsky* showing poor motor performance and *WISC* memory. Thus, in addition to verbal deficits and socio-economic status, three patterns of adjustment were revealed: aggressive, passive, and negative.

IV-13 Personality, self-concept, and reading

Shepps and Shepps (244) used the *Survey of Study Habits and Attitudes (SSHA)*, which has been reported to be valid in junior high school, with sixth graders. Sixteen boys and 10 girls in a private school were given the SSHA, the Arithmetic Skills section of the *Iowa Test of Basic Skills*, and the *Metropolitan Reading Achievement Test*. Rank order coefficients of correlation were calculated. Attitudes correlated (.37) with reading; boys accounted for this relationship (.60) as there was no significant relationship with girls (.02). However, among girls, attitudes correlated .76 with arithmetic scores.

Glavin and Annesley (99) explored the academic achievement and cognitive abilities of 130 boys referred by teachers as having conduct problems or being withdrawn. In three elementary schools, all teachers were asked to complete the *Behavior Problem Checklist* for any child who would require referral to a resource room for placement. All of the 150 children, representing 5.8 to 7.5 per cent of their school's enrollment, had IQ's of at least 70. Only 130 boys were chosen for the study. A majority had hyperactive-aggressive behavior. Intelligence was determined by the *Lorge-Thorndike Intelligence Tests* or the *Slosson Intelligence Test*. The *California Achievement Test (CAT)* was given to all children to determine reading and arithmetic achievement. *Bond and Tinker's* formula was used to estimate expected levels of achievement. Discrepancy between expected and achieved levels were classified as mild, moderate, and extreme. Three behavioral types were found: conduct problems, withdrawn, and inadequate-immature. The data revealed that 81.5 per cent of the pupils were underachieving in reading and 72.3 per cent in arithmetic. The largest proportion of underachievers were classified as extreme. For comparison, these findings were compared with a stratified sample of boys not referred. Extreme underachievers in reading included 50 per cent of referred versus 21 per cent of non-

referred; in arithmetic, 38 versus 6 per cent. Differences between reading and arithmetic scores of the referred cases showed arithmetic scores of the referred cases to be significantly (.001) higher. To determine conceptual or cognitive skills, scores on the Arithmetic Reasoning and Reading Comprehension subtests of the *CAT* were compared with scores on the Arithmetic Fundamentals and Reading Vocabulary subtests. The boys scored significantly higher (.01) on the latter, called concrete, with arithmetic making the largest contribution to the difference. Finally, a comparison was made on the *CAT* of 34 conduct problems with 9 withdrawn boys. Neither reading nor arithmetic scores distinguished the two groups.

Another investigation, by Glick (101), examined the relationship between early failure in reading and subsequent changes in 1) general and academic self-concepts, 2) attitudes toward school, 3) perceived parent behavior, and 4) classroom peer attributes. Change was determined by data gathered at the beginning and end of third grade. Children who scored at or above grade 3.0 on one or more of the reading subtests of the *Metropolitan Achievement Tests* were called "good" readers, while the others were assigned as "poor" readers. Self-concept was assessed by using an adaptation of the Brookover, Erickson, and Joiner instrument called *Self-Concept of Ability*. Ten items were added relating to general ability and six relating to academic ability. School attitudes were assessed by the *Pupil Opinion Questionnaire* (60-item *Likert*-type scale). Included were items dealing with the teacher, school work, peers, and school in general. Parental behavior was assessed by a reduced version of *Schaefer's Child's Report of Parental Behavior* which dealt only with the mother. A modification of the *Syracuse Scales of Social Relations* was used to determine peer relationships. On each variable, post-test scores were regressed on pretest scores so that each pupil's actual score could be compared with the predicted score. Then chi squares were calculated on the frequencies of favorable and unfavorable changes. The results showed more favorable changes (.01) in self-concept of good readers who were boys but no changes for poor readers and no differences among girls. Poor male readers were more likely to have unfavorable than favorable attitude changes toward teachers and peers, while no changes were found for good readers. Good female readers were more likely to have favorable than unfavorable attitude changes, but no differences were found among poor readers. No changes in the boys' perceptions of parental behavior were significant

among good readers, but 12 of 15 comparisons of poor readers were in an unfavorable direction. For example, these boys reported more hostile control (.01), and more instilling of anxiety (.05). Among girls, favorable changes occurred in reported parental behavior in 14 of 15 comparisons for good readers while only three dimensions showed unfavorable changes for poor readers. On peer relationships, poor male readers received decreased mean ratings from the same sex, and good female readers received increased mean ratings from the same sex, but no other differences were significant. The results show patterns of sex differences in response to inadequate school performance which are quite different among boys from among girls.

Farley and Truog (79) examined the relationship of reading comprehension, among college students, with extraversion-introversion, neuroticism, and achievement motivation. They used both resultant achievement motivation (RAM) and academic achievement motivation (AMM). *The Eysenck Personality Inventory (EPI)* was used to rate extraversion-introversion and neuroticism; RAM was obtained by subtracting normalized scores on the *Test Anxiety Scale* from normalized scores on the *Farley Drive Scale*. AAM was measured by *Buxton's* scale number two. Reading comprehension was the score earned on the *Davis Reading Test*, given last. Subjects were divided into thirds on the basis of scores on each of the measures used and compared with reading comprehension (speed was not reported). Analyses of variance showed no significant contributions of any of the variables described above to reading comprehension.

IV-14 Socio-cultural factors and reading

Musgrove (188) reported on the achievement, at second grade, of 106 black and white children who had been studied at kindergarten level. Specifically, black and white boys and girls were compared and rated for social adjustment by their teachers. Each subject was given the *Stanford Achievement Test*. The *t* test was used to determine significant differences on the subtests. The investigator found significant (.01) differences on all subtests favoring white over black boys. For girls, significant (.05) differences were found only on Paragraph Meaning and Vocabulary with white surpassing black. On all subtests, girls surpassed boys (.05 or better). No significant differences were found in social adjustment. These differences are of particular interest because at kindergarten level, a difference was found on a verbal test but no differences between

races were found on measures of intelligence, motor control, or a verbal scale.

Pikulski (206) studied the relative effects of knowledge of results, enthusiastic praise, and candy as rewards for learning to recognize words. The subjects were black boys and girls entering first grade. A preliminary learning task using seven words with line drawings was used. At the end of this session, one of the three rewards was given to each group respectively. Shortly thereafter, each group was asked to learn four new words by the same procedure, and the number of errors were recorded. The number of errors was the criterion, while the *Peabody Picture Vocabulary* IQ and the number of errors in pre-reinforcement trials were covariates in a multifactor analysis of covariance. The results showed significant differences between the groups and significant interaction of sex and treatment. For boys, the *Newman Keuls* procedure, used to analyze the differences in means, showed no significant difference between social and material reinforcement; but both were superior to knowledge of results. Among girls, social reinforcement was definitely superior to material or knowledge of results. Caution is offered that the disadvantaged children may forget the words quickly.

Frerichs (93) explored the relationship between self-esteem and academic achievement among black children in a lower social class. The three school variables were IQ (test not specified), grade point average (GPA), and reading scores from an unnamed standardized test. The *Self Esteem Scale* by Rosenberg was adapted by revising sentence structure and vocabulary. The top and bottom thirds of each distribution (26 and 27) were identified. Mean scores on the *Self Esteem Scale* were compared by the *t* test. Pupils with high GPA and high reading scores were significantly higher in Self Esteem than were the poorer achievers. However, no significant difference was found in IQ.

Dinnan, Bickley, and Cowart (66) determined the differences between high and low achievers in reading on the *P/S Oral Language Inventory* then related socio-economic status to achievement. The subjects were nominated as poorest or best readers in their classes by 25 teachers in second, third, and fourth grades. Each subject was given the oral language test individually. The responses were classified as paradigmatic or syntagmatic. Analysis of variance showed a significant difference between good and poor readers with good readers giving many more paradigmatic responses. Then sub-

jects were reclassified by socio-economic status. Of 55 subjects considered as deprived, 51 were poor readers; of 75 considered advantaged, 61 were good readers. A plan for manipulating relations is presented to compensate for deficits.

Champion (50) replicated an earlier study of word associations by Doak with a different population. The subjects of this study were culturally, economically, and academically deprived. Four groups of 20 each responded to 25 lexical and structural words presented individually and orally. Each group had a different set of words. The 100 words were chosen from *Coleman's* learnability list and replicated *Doak's* list. Each pupil's responses were recorded by the examiner, and the results are presented descriptively. Only about one-fourth of the responses were common and three-fourths unique. In contrast, with middle-class children, the previous study by Doak had found three-fourths common and one-fourth unique. No sex differences were found. Observation revealed that when these pupils, with reduced verbal facility, had no ready associate, they sought a perceptual cue or an object in the room. This cueing technique may have accounted for the preponderance of unique associations. The most prevalent response was syntactical, similar to Doak's population. Phonological commonalities appeared more often among deprived than among middle-class children, but in this group the response was frequently meaningless as it was not a word. Some evidence was found of idiodynamic set. Monosyllabic words produced more common responses than did polysyllabic words.

Green and Rohwer (106) investigated two levels of intellectual functioning among black children who differed in socio-economic (SES) status. The subjects were 60 fourth graders stratified with respect to SES. The *Warner Index of Status Characteristics* was used to determine SES. The 60 subjects were partitioned into three groups called low SES, lower-middle SES, and middle SES. Information collected included teachers' grades in reading and arithmetic, total reading score on the *Stanford Achievement Test*, and IQ on the *Lorge-Thorndike Intelligence Test*. All of these ratings revealed progressively higher scores from low to middle SES. Three tasks were administered: a paired-associate (PA), a digit span, and the *Raven Coloured Progressive Matrices*. The PA and digit span were classified as Level I-tests of basic learning abilities; the Raven was considered Level II. The PA task was composed of 20 paired familiar objects and the study-test method was used. The score was the number of

correct responses on two test trials. The digit score was the number correctly reproduced over the seven series lengths. Mean scores were calculated for the three tasks over SES levels. Analysis of variance for the PA task showed no effects of SES and no interaction of groups with trials; hence no group differential in learning. However, the main effect of SES on the digit span task was significant (.05). The low SES group differed significantly (.05) from the other two which were similar. Likewise on the Raven test the low SES group differed significantly from the other two SES groups. Intercorrelation coefficients among the variables were secured. The PA and digit tasks were correlated only .144. The digit span test resembled the *Lorge-Thorndike* rather than the *Raven*. The highest coefficient (.634) was between digit span and *SAT* Reading scores.

Bailey (15) attempted to differentiate the effects of cultural deprivation and achievement on auditory comprehension as it relates to reading. Beginning with 308 subjects, all took the *Wide Range Achievement Test (WRAT)* and were classified as achievers if their scores were within six months of expected grade. All others were considered nonachievers. The subjects were then classified by the *McGuire-White* adaptation of the *Warner Socio-Economic Index*, as deprived and nondeprived. Four groups of 20 subjects each were formed on the basis of the two classifications. The auditory materials were responses of subjects to six picture cards of the *Peabody Language Development Kit*, edited to 500 words and recorded by a male narrator. The auditory cloze test was used to measure comprehension. Subjects in each group were exposed to auditory materials from each of the four producer groups. After listening to the passage, the cloze test, with every fifth lexical word deletion, was given and the subjects' answers recorded. Comparisons between deprived-achievers (DA), deprived-nonachievers (DNA), nondeprived-achievers (NDA) and nondeprived-nonachievers (NDNA) were made. The analysis of variance shows no effects of deprivation but significant effects of achievement and auditory materials. Achievers, either DA or NDA groups surpassed either group of DNA or NDNA on the cloze tests. A hierarchy of difficulty of the source of materials were, beginning with the most difficult: deprived nonachievers, deprived-achievers, nondeprived achievers; and the non-deprived-nonachiever was easiest. Implications for reading are offered.

Labov (159) explored the pronunciation of the *-ed* suffix by boys who spoke nonstandard English, then explored linguistic charac-

teristics of the *d* and *t* end sounds on words. The *-ed* suffix appeared in three of nine short sentences read by 46 boys. Each sentence was constructed with the homograph *read* in the clause (*i.e.*, When I passed by, I read the posters). Another three sentences included *read* in both present and past tenses to see if they were correctly pronounced. It was possible then to relate the first to the second verb. The reading level of these boys on the *Metropolitan Achievement Test* was two to five years below the fourth to eleventh grades in which they were placed. All boys had difficulty reading the nine sentences. The per cent correct in reading the *-ed* was not related to the *Metropolitan* scores. Linguistic examination of the simplification of the consonant clusters and of the inherent variability and regularity of *-t*, *-d* led the investigator to conclude that it is necessary to learn how to transform variable rules into categorical rules before this problem will be solved.

Hutchinson (131) examined the scores on the *Metropolitan Achievement Tests*, Form A, Primary II, Test 2, Word Discrimination to determine items which might be dialect-prejudiced. The first analysis was made by identifying distinctive linguistic features reported in black dialects. Twenty tests were selected from those enrolled in a neighborhood school of the inner city and 10 tests given to children in a recreation center were scored according to directions. Raw scores, standard scores, and grade scores were recorded. Subsequently, each test was scored again with the dialect-prejudiced items eliminated. A comparison revealed that when scored according to directions, 40 per cent were reading below grade level; when rescored only 26 per cent read below grade. Furthermore, on the first scoring, 20 per cent were reading one full year below grade; when rescored, only 6 per cent read at that level. All errors were tabulated and other items on which many errors occurred were examined. Twelve of 35 or about one third were considered unfair to black pupils.

Two studies examined children's reading preference in disadvantaged groups and in relation to social class. McNinch (180) used three pictures relating to each of four topics to determine reading preferences. Furthermore, he wished to learn if there would be uniformity of preference over three grades by sex and race, and if common interests could be determined as most and least preferred. The pupils were black and white disadvantaged from grades three, four, and five. The 12 pictures were presented in a random display,

and each pupil was asked to select the picture that represented the story he would most like to read. Choices continued until the last picture was chosen as least preferred. The order of numbers of pictures chosen was recorded and analyzed by *Kendall's Coefficient of Concordance (W)*. Eight separate values of *W* were calculated, and they ranged from .03 to .11, none of which were significant. Thus the ranked data were not considered reliable. Chi square analysis was used to test the common interests ranked as most and least preferred. Both were significant (.01). A frequency count of the categories ranked them from most to least preferred: wild animal stories, fairy tales, peer or community relationships representing ethnic backgrounds, and peer or community relationships. The distributions were significantly (.01) different from chance.

Ellison and Williams (74) evaluated children's preferences for both stories and illustrations in three basic schemes in England. The subjects were equally divided between working class and middle-class families, with equal numbers of boys and girls. A modified *Guttman* scalogram with a five-point scale was used to rate the books and illustrations, and each child chose the best, second best, and least liked story. The schemes used were *Ladybird*, which conveyed a middle-class ethos; *Griffin*, in which stories representing fantasy were selected; and *Nippers*, a series designed to provide stories with which working-class children could identify. The choices of *Ladybird* and *Griffin* were significantly (.01) greater than *Nippers* on the scale and under forced-choice. There was a marginal but not significant influence of socio-economic level. Boys appeared to prefer *Ladybird*, but there were no sex differences relating to *Griffin*.

Bingham (27) analyzed the illustrations of Afro-Americans in 41 children's books published between 1930 and 1968 to determine the variations in physical characteristics, environmental conditions, adult roles, and interaction with other characters. A coding instrument was devised to describe and differentiate treatment, with categories described as mutually exclusive. Every illustration was examined and coded. In addition, two other persons coded a random sample of books. No data were given but major findings were 1) there was a variety of physical characteristics with most exaggerations appearing in 1930-1944; 2) there was a paucity of interior and exterior environmental situations; 3) there were more blacks in work roles from 1930-1954 than there were whites in these roles for the

periods 1955-1968; 4) although the amount of physical interaction increased from the first to the last period, none of the black main characters interacted with a female teenager or a white baby.

One report, Kersey and Fadjo (150) compared the basic vocabulary of Seminole Indian children with the two lists by *Dolch*. The children dictated their own stories to university tutors who typed them, the children illustrated them; then they were bound and placed in the school library. About 50 of these books were examined to compile a *Seminole Word List*. A resultant list of 539 words were found to appear at least three times in five different books. Results showed that the Seminole list included 149 of the 220 on the *Dolch* list and 141 which did not appear on the last list. In addition, the *Seminole* list included 60 of the 95 *Dolch* nouns plus 189 words which did not appear on the *Dolch* list. Later these children were asked to identify the *Dolch* list out of context, and missed only 32 of the 220 and about a third of the nouns. It appears that these children recognize words which they do not use in dictating stories.

IV-15 Home and family characteristics

Only one study emphasizing family characteristics was reported. Callaway (43) used children in grades four and seven from a city and the surrounding area. The *California Test of Mental Maturity* and the *California Reading Test* were given to all subjects. Parental occupation was classified according to *Hollingshead's* seven categories. The data were analyzed using the *Duncan Multiple Range Test*. Chronological age was classified by three-month groups, but no significant differences were found in the reading of the four groups. However, when intelligence was a covariate, the two younger groups read significantly better than the older group in grade four; no differences were found in grade seven. Comparisons of white and black pupils showed that reading achievement of white pupils was superior at both grade levels and even when intelligence was a covariate. Children whose fathers worked read significantly better at grade four than those whose fathers did not work. No differences regarding mothers' work status was found. Teachers rated pupils on a five-point scale in three areas: 1) adjustment in the classroom, 2) amount of reading material in the home, and 3) family income. No differences in reading at fourth grade were found except that those with poor adjustment significantly surpassed all other groups. At seventh grade, the adjustment and achievement ranks were harmoni-

ous with most intergroup differences significant. The amount of reading material in the home was related to reading achievement at both grade levels only in that those with a large amount surpassed those with less. Family income showed that the very low group achieved lowest in both grades. A few other differences suggested some relationship between the two variables. No significant differences in reading were found among occupational groups.

IV-16 Reading interests

Mason and Blanton (175) studied the interests in stories exhibited by 180 children ages three, four, and five. Individual interviews were held with pupils to determine whether they liked to be read to, the stories that they liked best, and the ones they would read if they were able to read. Only nine children responded that they did not like to hear stories. The choices ranged in frequency: Fairy Tales (40), Animal (29), TV Character (16), Storybook (13). Topics named fewer than 10 times were Machines, Everything, Easy Readers, Ghost Stories, and the *Bible*. Responses not classifiable were 49. If pupils could read by themselves, the responses were identical with or similar to the choices above listed.

Rose, Zimet, and Blom (221) checked first graders' preferences for five types of reading textbook content. The subjects were 76 children from two middle-class suburban schools. Pairs of stories were selected by computer controlling length, reading difficulty level, environmental setting and the like. Variations of theme were pranks and pollyanna; of activity age, were 3-5 years and 7-9 years; of character interaction, were peer only and parent and child; of sex activity, were boy and girl; and of outcome, were success and failure. The pairs of stories were read to small groups and each subject indicated his preferred choice. In addition, 12 children were interviewed concerning their reasons for preference. The binomial test was used to determine the significance of differences for the group of subjects. The children significantly (.05) preferred pranks to pollyanna and peer interaction to child-parent interaction. No significant differences were found for age activity nor for success-failure outcome. Boys preferred the boy—and girls, the girl—activity (.001). The reasons for choice were not successfully established.

Desjardins (65) submitted a questionnaire to 204 students in one high school to determine students' interests, favorite books and magazines, the time spent reading and viewing television, and sources

of reading materials. About 55 per cent of girls read materials other than assignments for one half hour or more each day, while only 48 per cent of boys spent as much time reading. Both groups spent much more time watching TV, with girls spending more time than boys. When asked to name the best book they had ever read, the only titles listed by both boys and girls were *Black Like Me*, *My Side of the Mountain*, and *Naked Runner*. Generally, boys chose sports and car stories while girls chose teenage novels and historical romance. Junior and sophomore boys preferred car and sports stories, while seniors and freshman boys ranked mystery and humorous stories first. Girls ranked romance first, mystery second, humor third, and adventure fourth. The school library was the source of most reading material, some was purchased. A few students used the public library. The most popular magazine with boys was *Hot Rod;* with girls, *Seventeen*. Major sources of news were television, radio, and newspapers.

IV-17 Readability and legibility

A large proportion of the studies in this section were designed to assess or use the cloze procedure. Rankin (210) sought to equate per cent correct on the cloze with standardized reading grade equivalents of pupils in grades four through eight. He used whole classes in successive grades in Study 1. Five articles from different books were chosen, with a 250-word selection from the middle used for every five-word deletion. Each selection was evaluated by the *Dale-Chall* and *Fry* readability formulae. The subjects who took the test had recent scores on the Paragraph Meaning subtest of the *Stanford Reading Achievement Test*. The grade equivalents from the *Stanford* were averaged for all students making cloze test per cent scores of 38, 44, and 58. Comparisons of cloze at 38 per cent with ratings by other formulae show that the cloze was relatively easier than the scores on the other two formulae. Using the 44 per cent criterion, considered appropriate for instructional level, there was fairly good correspondence with the formulae. Using the 58 per cent criterion, appropriate for independent reading level, the articles were too difficult for all grades. In Study II an *Informal Cloze Inventory* procedure was explored. It was based on materials of unknown difficulty with readers whose achievement was known. Six subjects were chosen from classes in grades four, five, and six. Each subject scored between the fortieth and the sixtieth percentiles for respective grades. Three 1,000-word

narratives provided 250 words with a 50-item cloze. The first 150 words were used as an oral reading test, with two comprehension questions. The cloze was given first and the oral reading inventory a week later. Mean per cent was found for each group on the cloze and the oral reading test. The results placed two articles at the sixth and one at the fifth grades. These selections were calibrated by the *Fry* and *Dale-Chall* formulae. The cloze placed the selections at a slightly higher grade level than did the formulae.

Tuinman (276) devised a reverse cloze called *Removal of Information (RIP)* in which the subject is asked to delete those words which would be most difficult for another person to guess, according to a given frequency. Then he tested the patterns of deletions to determine if they were random. Finally, he related the *RIP* scores to cloze scores and other language tests. First, it was necessary to delete each word by constructing five cloze tests and giving them to five groups of junior high students. From these data, the relative difficulty of each of the 300 words could be calculated. Another cloze test (CC) was devised and given to 140 junior high subjects; after two days they were given the *RIP* test, with a great deal of explanation. Then both the CC and *RIP* tests were given to an adult sample. For each subject, the *RIP* score was the average of the information value (difficulty) of each of the 60 words; thus a low score was superior to a high score. The range of possible scores was 9 to 76 per cent. The mean *RIP* scores for the junior high sample was 27 and for adults, 24 per cent, which was well below a chance deletion of 41 per cent. The *Spearman-Brown* reliabilities were .73 and .88. The adults performed significantly (.01) better than the younger subjects. For 69 junior high students, IQ scores from the *Lorge-Thorndike Intelligence Test* and achievement scores on the *Iowa Test of Basic Skills* were available. Coefficients of intercorrelation were computed. The cloze and *RIP* coefficients were very low ($-.13$ and $-.15$); corrected for attenuation, the $-.20$ for junior high students was barely significant. Principal component analysis of all intercorrelations yielded four factors: IQ, *RIP*, cloze, and achievement. Thus the *RIP* test appeared to be both reliable and unique.

In a second study, Tuinman (275) explored the relationship between *RIP*, cloze, and associational fluency. Associational fluency was assessed by the *Controlled Associations Test (FA-1)* and by *Associations IV (FA-3)*. The subjects were 41 graduate students who completed four tasks: 1) *RIP*, 2) cloze, 3) *FA-1*, and 4) *FA-3*. Co-

efficients of correlation revealed only minimal relationships between *RIP* and cloze, and between cloze and *FA-3*.

Byrne, Feldhusen, and Kane (42) investigated the relationship between a cloze and a modified cloze procedure, and three measures of divergent thinking. The subjects were 113 seventh graders with mean IQ of 104.02 on the *Otis* test. Divergent thinking was determined from the Alternate Uses, Expressional Fluency, and Controlled Associations tests, all from *Guilford*. The cloze material was written by Bormuth and rated at grade 6.5 on the *Dale-Chall* readability formula. On the cloze 1, there were 59 blanks from fifth-word deletions; on cloze 2 the same blanks were replaced by five blanks. On this adapted cloze, students were asked to guess as many words as possible and circle the best one. The two cloze forms were assigned randomly to half of the subjects. Analysis of covariance used IQ as a covariate. K-R20 reliability coefficients for cloze 2 were .91 for the best word and .85 for more than one word. They found that subjects high in associational fluency scored significantly better (.01) on the cloze 2 test, and tended to score higher (.06) on cloze 1 than did those low in fluency. No significant effects of the other two divergent thinking variables were found. Responses to cloze 1 were significantly superior to those on cloze 2, selection of best word. The interaction of cloze 2 and associational fluency was significant (.09) but none of the other interactions were significant.

Mac Ginitie and Tretiak (170) evaluated depth of postponement and number of levels in a sector analysis as predictors of reading difficulty. Two criteria of difficulty were used: cloze scores and listed grade equivalents of the 80 passages from the McCall-Crabbs *Standard Test Lessons in Reading*. A fifth-word deletion of each passage provided the material used with about 10 college and graduate students, who filled in each of the 80 cloze passages. The arcsin value of the proportion of correct restorations was averaged for each test lesson to provide the criterion score. Each of the test lessons was analyzed for 12 predictor variables: 1) ratio of hard words *(Lorge)*, 2) ratio of prepositional phrases *(Lorge)*, 3) mean sentence length *(Lorge)*, 4) seventy-fifth percentile of sentence length, 5) mean Yngve maximum depth, 6) seventy-fifth percentile of Yngve maximum depth, 7) mean Yngve total storage, 8) seventy-fifth percentile of Yngve total storage, 9) mean Allen maximum depth, 10) seventy-fifth percentile of Allen maximum depth, 11)

mean Allen total storage, and 12) seventy-fifth percentile of Allen total storage. The first two analyses followed Lorge's procedures except that Stone's revision of the *Dale List of 769 Easy Words* was used. A correlation matrix for the 12 predictor and two criterion variables was constructed and multiple regression analyses were used to determine the best combination of predictors. Reliabilities of all measures were calculated and all were quite high except Yngve maximum depth, which was .61. The multiple correlation for prediction of the *McCall-Crabbs* criterion by the ratio of hard words and mean sentence length was .664. None of the mean depth measures, when combined with the ratio of hard words were so high as that with sentence length. Besides, they were no more effective in predicting the cloze criterion. Likewise, none of the seventy-fifth percentiles of depth measures proved more effective than sentence length. Moreover, the low beta weight for prepositional phrases added little to the *Lorge* formula. It was recalculated with another sample of test lessons and found to vary considerably. For these reasons, the *Lorge Readability Formula* was recalculated and recommended: Grade Level = 10 (Ratio of Hard Words) + .07 (Average Sentence Length) + 3.0.

Smith and McCombs (253) explored the relative effects of white space and *Flesch* readability levels on reader preference and comprehension. Four versions of the same news story were prepared, manipulating white space and difficulty as follows: 1) low white space-very difficult, 2) low white space-easy, 3) high white space-very difficult, and 4) high white space-easy. These versions were set in type and the printed columns set side by side in pairs in all six combinations. Photographic slides were prepared and flashed at one second to permit subjects to react to the graphics without being aware of the reading ease of the copy. Second, the slides were exposed for six seconds to permit scanning of both selections. Third, subjects were given one of the four versions and asked to read it once as they would a news story. Then each subject rated the story on a five-point semantic differential scale for: Dislike/Like, Difficult/Easy, and Boring/Interesting. Finally, each subject took a 10-question comprehension test on the version he read. Twenty-four subjects (not described) were assigned pairs of versions in alternating positions and finally six subjects read each version. In the first two steps, results were arrayed along an interval scale using *Thurstone's* paired-comparisons technique. Results of the paired

comparisons with one-second and six-second exposures followed the order listed above for the four versions. White space appeared to be more important than readability level in preference of the versions, although both contributed to preference. Responses to the semantic differential, Difficult/Easy, corroborated the effects of both and especially white space. The other two semantic differential scales tended to support the same choices. Analysis of comprehension showed no differences among the four versions suggesting that graphics affect choice but not understanding if the selection is read.

Jongsma (147) compared librarians' ratings of reading levels of 12 *Newbery Award* books to the estimates obtained from five readability formulas. The books were award winners from 1958 to 1969. The librarians were half public and half school librarians in Indiana. Of 100 questionnaires sent out, 53 were returned, 44 of which were usable. The readability formulas applied were 1) *Dale-Chall Formula*, 2) *Flesch's Reading Ease Formula*, 3) *Fry's Readability Graph*, 4) *Gunning's Fog Index*, and 5) *McLaughlin's Smog Formula*. School librarians tended to rate the books more difficult than did public librarians, and there was less variation among school librarians. Considering all ratings on a single book, variations were three to nine grades. In contrast, formula estimates were more consistent, seldom varying more than two or three grades. Finally, the mean ratings of the librarians were very close to those of the formulas with deviations seldom more than one grade level. Coefficients of correlation between public and school librarians was .89; between public librarians and formulas, ranged from .29 to .68; and between school librarians and formulas, ranged from .31 to .68.

Fleming (84) examined fifth graders' perception of the difficulty in reading materials rated from third to ninth graders by the *Dale-Chall* and *Farr-Jenkins-Patterson* readability formulas. The subjects are described as average in IQ and reading achievement ranges and from a middle-class community. In each of eight sets of similar themes, four selections were rated at third-, fifth-, seventh-, and ninth-grade levels. First, each child was handed a set of four selections and was asked to select the best one for him. No data were given concerning these choices. However, each child received the sets of four selections again and was asked to identify the easiest and the hardest. Tabulations of inappropriate responses were made for children who scored below the mean (low) and above it (high) on an unidentified comprehension test. The results showed

that the subjects were more accurate in identifying the easiest than the hardest selections. The total of inappropriate responses over eight sets for the easy-choice task was 190; fifth-grade difficulty was chosen by 108; seventh grade by 51; and ninth grade by 31 subjects. For the hard-choice task, inappropriate responses were 238; the seventh grade selection was chosen by 149; fifth grade by 60; and third grade by 29. Analysis of the themes and their familiarity to children was offered as a possible explanation of the inappropriate easy tasks but not of the difficult tasks. However, the author concedes that the children's choices might have been more accurate than the assignments by reading formulas.

Simmons and Cox (247) compared reading achievement with the readability scores of language texts to determine whether they were of appropriate difficulty. Three school systems, using three series of books were chosen. The *Flesch Readability Formula* was used with books seven, eight, and nine of each series. Concurrently, the mean reading scores of all students using each book were secured from standardized tests. One grade was added to each mean score to allow for errors. At the seventh grade, 613 students, or 74 per cent were judged to be unable to adequately comprehend their texts. In eighth grade, 59 per cent of the 832 students were reading below the level where they could understand their texts. At ninth grade, 60 per cent of 763 students scored below the point where they might read their texts. These newer texts were at least one grade, and sometimes two to four grades, more difficult than the older texts.

Steinfeld and Greaves (265) explored the effects, on recognition of words, of degree of retinal tilt, *print* vs. *script*, word length, and response indicator where words were projected onto a horizontal plane. The subjects were volunteer psychiatric aid trainees. The words were of AA frequency in the *Thorndike Lorge* book of 30,000 words. Foil words had at least A frequency. Words in print were read by 24 subjects and in script by 24. Type of test included Simultaneous Alternate Choice (SAC) and Identification (I). In the SAC, the subject selected the previously exposed word from five; in the Identification the subject read the word orally. Test slides were shown at 0°, 90°, and 180° orientation. Word length was three, five, and seven letters. Type of alternate choice for SAC included alternate choices identical with the critical word at the first (F), middle (M), or the last (L). Print was significantly easier to recognize than script on both types of tests, the SAC, and I. Seven

letter words at 180° were more difficult than at any other orientation. Significant interactions occurred between degree of tilt and word length in both print and script. Likewise degree of tilt interacted with I and SAC, especially in the latter when alternate choices began with the same first letters as the target word.

V. *The teaching of reading*

Research into the various instructional aspects of reading has been classified into one of the subsections of this category. In the recent past, *the teaching of reading* section has frequently been the largest in terms of numbers of studies categorized under it. This year, as was true last year, the section is considerably diminished in size. The reasons are unknown. Another interesting phenomenon that appears to be occurring is the lessening of interest in primary methods, as indicated by the fewer number of studies being reported in that area, and the increase in the number of reports on instruction with older age groups.

V-1 Status of reading instruction

Title I schools of California were analyzed by Rider (218) to delineate common elements of instructional practices and organizational patterns used in nine of the most effective reading programs in 1968-1969 for disadvantaged pupils in grades one through six. Data were collected on a sample of 998 students from evaluation reports and from on-site observations of the reading programs. Major findings centered on the screening process of students, procedures for reading diagnosis, types of organizational patterns, reinforcement techniques, inservice training of teachers, instructional strategies, and reporting practices of pupil progress. Among the findings were the following: 1) pupils were screened for admission, 2) individual and intensive diagnoses of reading problems were made, 3) instruction was given by a reading specialist, 4) inservice training was organized during the regular school day, and 5) evaluation of the student and of the total program was frequent. In the report were recommendations for the development of a program for reading instruction of Title I pupils.

Cane and Smithers (44) did an intensive analysis of successful and unsuccessful British infant schools based on the data re-

ported earlier by Morris and Goodacre. They chose 12 schools, using about 450 children, from "lower working class" areas in London, and for comparision, about 120 children enrolled in four middle-class schools. Data were available from the *Harrison-Stroud Reading Readiness Profile*, given in 1959, and the reading scores from the *Reading Attainment Test*, given two years later. On the basis of readiness ranking, it was possible to predict achievement; schools that changed positions, such as Greville which was ranked below average in readiness but above average in achievement, were of special interest. A regression equation was used to determine prediction. Some common characteristics of successful and unsuccessful schools were then determined from the extensive observations that had been made. The major difference found was lack of systematic instruction in the unsuccessful schools. There were few regular periods of reading instruction and often teachers waited for pupils to exhibit some spontaneous interest in reading. In contrast, in the successful schools, reading instruction was organized and recognizable from the beginning with early phonic instruction. Another distinguishing feature was the extent to which the teacher exerted direct control over children's learning. In the unsuccessful schools, teachers favored activity and creative work at the expense of organized learning. Rating the 12 schools according to degree of teacher direction showed that all unsuccessful schools had the least direction, four of the six successful schools had a high degree of teacher direction. The other two combined a child-centered approach with structure in learning, especially the teaching of phonics. A comparison of the relationships of various subtests on the *Harrison-Stroud* with later achievement showed visual and auditory discrimination of words and sounds to be more highly related than the more general symbolic skills. The teachers' estimates of children's abilities for potential reading success were generally lower than the readiness test. Teachers' estimates of visual discrimination were more highly predictive than speech and vocabulary. Teachers did not observe auditory discrimination. Only about 25 per cent of definitely unready children made appreciable reading progress showing that little progress was made in school in overcoming the lack of readiness. Teachers' estimates of IQ's were likely to be high for children who learned to read. A small disadvantage was found in being a younger child within the year range of entering pupils. Over half of the un-

ready children spent a high proportion of their school time with teachers who had difficulty in classroom control. A note about i.t.a. suggests that the success it has achieved may not be due to the alphabet alone but to new interest in a structured reading program with early instruction in the sounds of letters, and a well-organized staff which, in this study, appeared to be the basic ingredients of success in teaching reading.

V-2 Comparative studies

Based on a literacy survey of 32,000 London eight-year-olds, Russell (227) disclosed that London children did not read as well as the national sample of children of the same age on a group test of sentence completion. Analysis of test scores and home backgrounds of poor and good readers indicated that the proportions of poor readers increased and good readers decreased as occupational status of the parent or guardian declined. Of particular interest was the finding that many poor readers came from homes judged by teachers as not culturally stimulating. The proportions of poor and good readers from stimulating homes were 3 per cent and 33.7 per cent respectively. In the report the limitations and values of survey testing and reading were described.

V-3 Early reading

Fowler (89) included 109 middle-class preschoolers as subjects in an investigation of the efficacy of a structural-analytic and sequential learning approach on learning to read. Selected for the experiment were children who showed socio-emotional and intellectual competence as well as motivational potential for learning to read on the basis of teacher judgment. Two separate groups were taught with one consisting of 60 of 104 children enrolled in the first year and with the other consisting of 49 of 76 children enrolled in the second year. Organized into five playroom complexes, the children were supervised by five group teachers and 10 assistants so that a one-to-six-or-seven teacher-child ratio was maintained. Reading instruction included 10- to 20-minute daily activity over a span of five to six months. Instruction focused on letter and word pattern acquisition in a socio-dramatic play setting. Reading materials consisted of graphemes, word, and sentence units printed on cards. Letter and word recognition measures were used as pretests and a

variety of author-constructed measures on word, sentence, and paragraph reading were used as post-tests. On all post-test measures, the mean performance level of the subjects was consistently around 80 per cent accuracy. Among the pretest variables as predictors of success in learning to read, mental age was the most consistent followed by letter-recognition scores and chronological age. Mean letter recognition scores correlated .46 with the level of primer reader completed for girls but only .20 for boys. Mental age showed a correlation of .22 with the reader level completed for boys and girls combined. A coefficient of correlation of .15 was found between chronological age and primer reader level completed.

Hamblin and Hamblin (115) explored the independent and combined effects of using token reinforcement and peer tutoring in the learning to read program of disadvantaged preschool children. The twenty-six white and six black subjects, who had a median CA of 59 months, were randomly divided into four experimental groups and placed in a reading program. All children were exposed to the same approach to beginning reading (i.t.a.), all received tokens and materials to be purchased with the tokens, all spent 10 minutes a day using the *Language Master*, and all had the opportunity to spend 10 minutes a day for eight weeks in reading sessions. In two groups, children were tutored by Job Corps teenagers; in the other two groups, the faster-learners were tutored by the Job Corps aides and the slower children were then tutored in turn by the faster children. At the end of each daily tutoring session, children were tested individually by the classroom teachers. Two of the groups received tokens for each page read correctly and for each item rendered correctly on the daily tests; pupils in the other two groups received tokens for attendance. An attempt was made to secure IQ scores using the *California Mental Maturity Test*, but only half the children were testable. The testable group was designated as high to medium IQ children, while the untestable children were designated as low IQ. High and medium IQ children read a mean of 1.4 books to criterion over the eight-week period when tutored by Job Corps teenagers and when reinforced for attending. When tutored by peers, they read 3.0 books, or if tokens were used, they read an average of 4.15 books. When both peer tutoring and tokens were involved, high to medium IQ children read an average of 5.5 books. For low IQ children the mean number of books read to criterion was a low of none for adult tutoring and

attendance tokens to a high of 1.65 when both peer tutoring and tokens for reading were used. Similar patterns occurred with the number of words and symbols learned to criterion.

V-4 Reading readiness

Several studies investigated the effect of perceptual training programs on reading readiness or beginning reading. Fisher and Turner (82) reported on a perceptual-motor training program utilized with entering black kindergarten children from economically disadvantaged backgrounds. A group of 20 children who received no formalized perceptual-motor training was used for controls. Experimental I group consisted of children from two classes who were exposed to the program for approximately three hours a day throughout the entire year. A second group, Experimental II, began the program in the middle of the school year. Data from fall and spring administrations of the *Slosson Intelligence Test (SIT)* were collected. In addition, in the spring children were given the *Metropolitan Readiness Test (MRT)*, *Frostig Developmental Test of Visual Perception (DTVP)*, and *Kephart's Purdue Perceptual-Motor Survey (PPMS)*. Increases on the *SIT* were approximately equal for all groups. Experimental groups performed significantly better on the *MRT* than did the control groups in both May and the following October with the Experimental II group performing better than the Experimental I group. No differences were noted between the experimental and control groups on the *DTVP* or the *PPMS*.

Collins and Bidle (54) replicated an earlier study designed to evaluate the merits of a motor fitness training program in first grade. The *Metropolitan Readiness Test (MRT)* and a *Teacher-Developed Motor Test (TDMT)* were administered to all first-grade pupils in the fall. Using these two scores, a total of 40 children were selected for the control and experimental groups. During daily half hour periods, the control group received the regular physical education program. Two days a week, the experimental group also received the program, and the other three days they were given instruction on 10 tasks of a motor fitness program. At the end of two semesters, children were again given the *MRT* and *TDMT*. Significant gains were noted for both experimental and control groups on both measures.

The impact of the *Frostig Visual Perceptual Training Program (VPTP)* on kindergarteners in six Midwestern rural school

districts was examined by Gamsky and Lloyd (95). Twenty kindergarten classes were divided into experimental and control groups that were randomly selected from morning and afternoon sessions taught by the same teacher. All experimentals received the *VPTP* for 15 minutes each day for four and half months. The *Frostig Developmental Test of Visual Perception (DTVP)* was administered as pretest and post-test, and the *Metropolitan Readiness Test (MRT)* was administered at the end of the kindergarten year. All groups were tested on the *Stanford Achievement Test (SAT)* the following year. Results from the use of variance and covariance techniques on differences of mean test scores show in general that the experimentals benefited from the *VPTP* inasmuch as *SAT* test scores of those using the program exceeded the scores of the controls. Also the *VPTP* group scored significantly higher on all *MRT* scales except on Listening. Of particular interest was the finding that children who scored in the lowest quartile on *DTVP* ranked lowest on achievement seemingly not benefiting from the *VPTP* even though in most need of visual perception improvement.

Six schools in the suburbs of a large metropolitan city in Pennsylvania participated in a study by Pryzwansky (208) to ascertain the effects of perceptual-motor training and manuscript writing on reading readiness skills in kindergarten. Selected as perceptual training programs were the *Frostig Development Book of Visual Perception*, *Template Training*, and *Peterson Handwriting System*. All three programs stressed the development of fine-motor skills required in paper-and-pencil tasks. A total of 559 subjects was organized into three experimental groups and three control groups. Experimental treatment was conducted 15 minutes a day for 13 weeks. Performance on the *Gates-MacGinitie Readiness Skills Test* was assessed one week prior to the beginning of the study and also at the end of the study. Two measures of visual discrimination were also given. The major finding was that there were no statistically significant differences between control and experimental groups on the criterion measures.

Wiederholt and Hammill (295) examined the efficacy of perceptual training on readiness and academic performance. A sample of 170 subjects from 18 kindergarten and first-grade classes in three lower-income, inner city schools were assigned randomly to experimental and control groups. The *Frostig Development Program of Visual Perception* was used over a 16-week period in experimental

classes conducted by trained teachers. The *Developmental Test of Visual Perception (DTVP)*, *Metropolitan Readiness Tests (MRT)*, and *Metropolitan Achievement Tests (MAT)* were administered as pretests. The *Slosson Intelligence Test* was given to obtain the intellectual characteristics of the sample. For the post-test, the *Philadelphia Readiness Test* and the *Philadelphia Reading Test and Arithmetic Test* were substituted for the *MRT* and *MAT*. At post-test time, only 130 subjects remained in the study, and from among these 21 experimental and 24 control subjects comprised the perceptually handicapped subgroups. Comparison of mean scores indicated that kindergarten and first-grade pupils who were trained in visual perception scored no higher than did the controls on the readiness and academic tests. Subjects who completed the most worksheet exercises made higher perceptual scores than did those who did the smallest number of exercises. However, among experimentals who completed over 200 worksheets in the treatment, the non-perceptually handicapped pupils made significant improvement in visual perception as measured by the *DTVP*, but the perceptually handicapped did not improve.

Hoffman (127) developed an inventory of factors identified as important to readiness for reading and to achievement in reading and reported his findings based on 120 predominantly rural children and 42 children from an industrial, urban area. Reading achievement of subjects was assessed near the end of grade three on both the *California Achievement Test* and the *Stanford Achievement Test*. Achievement in terms of ranking within the group was then related to four distinct areas of pre-kindergarten factors: physical characteristics, inter-personal relationships, emotional stability, and general experiences. A greater percentage of girls ranked in the first and second quartiles of their classes on the reading measures than did boys. Girls were also found to be more adept at dressing themselves to play outside than were boys. Among the top 10 per cent of readers, all could dress themselves upon entering kindergarten, whereas in the lower 10 per cent, only 86.7 per cent were able to do so without help. First-born children achieved significantly higher in reading than did other pupils. Boys appeared to be less socially mature than girls at the start of kindergarten. Reading to children alone did not appear to be a prerequisite for success in later reading achievement. There seemed to be some relationship between the development of independence as evidenced by having regular chores and/or being allowed to make purchases in stores and success in reading.

Sprigle (262) conducted an investigation of the effectiveness of *Sesame Street* as a means of preparing disadvantaged children for first grade. Subjects were 24 pairs of randomly selected disadvantaged children matched on the basis of IQ, age, parent education, parent occupation and income, and similarity of background. The experimental group attended two Head Start kindergartens in which *Sesame Street* was watched, and follow-up suggested activities were conducted at home and school. The control group attended another school program in which they were exposed to various learning activities, including letters, language, and listening experience. The *Metropolitan Readiness Test (MRT)* was administered to both groups at the beginning of the fourth week in first grade. On all subtest scores, as well as on the total score on the *MRT*, the control group scored significantly higher than the experimental group.

A multi-media approach called *Split Vu Reading Readiness Program* was employed by Ungaro (280) in a study with culturally different youngsters. The approach was designed specifically to provide learning experiences in beginning reading for children who have meager backgrounds and limited word knowledge. The program was taught to 26 first graders with stress on understandings of letter sounds, words, and concepts. Story content was built, in part, through the development of experience stories that were illustrated by the children and then filmed and mounted on slides. The 26 experimental and 67 control pupils were all given the *Metropolitan Reading Readiness Test* and the *Stanford Reading Test* in grade one. Comparisons of mean scores on the *Stanford* showed that the experimentals attained 1.734 grade score and the controls achieved 1.70 on paragraph reading at the end of the study.

V-5 Teaching reading—primary grades

Barr (18) analyzed the patterns of word recognition errors made by pre-reading grade one pupils who were instructed by two different methods. The patterns of errors were then compared with one another and also with the errors that presumably arise from experience in contextual reading as identified in earlier studies. Fifteen of the subjects were randomly selected from two urban schools and 23 from two suburban schools. All children in the study were exposed to four learning sessions. Two of the learning experiences consisted of individual administration of the auditory and visual tests of the *Mills Learning Methods Test*. Two other ses-

sions were done with groups of six children and consisted of the Phonics and Sight Word Tasks, developed by the author. The series of four tasks was completed within a two-week period in September of grade one. All tasks entailed learning and recognition of words in isolation. Error analyses included non-responses, graphically-constrained errors, and substitution errors. In addition, the substitution error source was analyzed to determine if they came from the same list, from a previously taught list, or from untaught or nonsense words. The per cent of non-response errors was significantly greater for the phonics tasks than for the sight-recognition tasks. There was a significantly greater tendency for errors on the sight word tasks to come from other words taught at the same time. More errors on the phonics tasks than on the sight word tasks came from other lists. The phonics tests also produced more untaught or nonsense words. Significantly more graphically constrained errors occurred with the phonics tasks than with the sight recognition methods. The author felt that instruction influenced the reading strategies used by the children.

Four studies were concerned with the reading of culturally different primary age pupils. Reading performances were compared by Morrison, Harris, and Auerbach (184) between urban black early readers and non-early readers to ascertain the effect of an early start in reading on subsequent achievement. Subjects were identified from data of a larger study on comparing reading approaches in first-grade reading (*CRAFT*) in the New York public schools. At the time of entering first grade, 58 children (or four per cent of the total population) were identified as having the ability to recognize one or more words in print (and were classified as early readers). Both early readers and non-early readers were taught to read by one of two approaches. One approach included a basal reader method or a combination of the use of basal readers with a separate systematic phonics program. The second approach was language experience. Early readers were compared with non-early readers, both matched and unmatched, from grades one through three on readiness and various achievement measures. Early in first grade the *Murphy-Durrell Reading Readiness Tests*, the Word Meaning and Listening subtests of the *Metropolitan Reading Readiness Test*, and the *Thurstone Pattern Copying and Identical Forms Test* were given. Toward the end of first grade, the *Stanford Primary 1 Achievement Test* was administered; and in grade two, the *Metropolitan Advanced Primary*

Reading Test was given. On all comparisons, early readers as a group were superior in reading readiness at the beginning of first grade and in reading accomplishment at each testing interval in the three years of the study, regardless of the method by which they were taught. Early readers increased their reading advantage as they progressed through school.

A one-year experimental program was evaluated by Zdep (302) who examined the effect on academic achievement of transporting urban black pupils to suburban schools. Thirty-eight children in grades one through five were randomly selected from a group of 170 pupils to be bussed to schools in nearby suburbia. A group matched by age, sex, and grade level remained at the inner school; they were used as a basis for comparison. For evaluation purposes, only 26 of the 38 children were used because comparisons of test performances were among children in grades one and two. Pretesting consisted of administering the *Metropolitan Readiness Tests* to the first grades and the *ETS Cooperative Primary Achievement Tests (CPRT)* to the second grades. At the end of the year, the *CPRT* was given to first and second graders. In addition, inventories and questionnaires were administered to participating pupils, their parents, and teachers to secure data on their attitudes and preferences toward the experiment. Analysis of covariance of test data revealed that bussed first graders outperformed their counterparts in each of the measured achievement areas of reading, mathematics, and listening skills; but at the second grade level, the mean gain scores were not significantly different. In the affective domain, transported children, for the most part, expressed positive feelings toward the program, and their parents indicated that the program was a success.

The effectiveness of three approaches to ability grouping with disadvantaged pupils was studied by Cartwright and McIntosh (48). Approximately 260 grade one, two, and three pupils were randomly assigned to 1) a self-contained class on the basis of chronological age (heterogeneous), 2) a self-contained class on the basis of intellectual and academic ability (homogeneous), or 3) an ungraded team-teaching situation on the basis of mental age. The *Peabody Picture Vocabulary Test (PPVT)* and the *Wide Range Achievement Test (WRAT)* were used to do the original classifying of children. These two tests and the *Metropolitan Achievement Tests (MAT)* were given at the end of six months and again after children had completed two school years in the program. In addition, children

enrolled in the program for one year were administered the *Lorge-Thorndike Intelligence Test* as well as the *MAT* and the *PPVT*. Children enrolled for two years were given the *Lorge-Thorndike*, *MAT*, *California Test of Mental Maturity*, and the *California Reading Test*. Children enrolled for three years received the *MAT* and the *Lorge-Thorndike*. Multivariate and univariate analyses of variance were performed using *MAT* raw scores as dependent variables. No one treatment was found significantly better than another on every variable in all grades. In grade one, children in the heterogeneous group made significantly higher mean scores on the reading subtest of the *MAT* than did the other two groups. The heterogeneous group also showed a tendency to score highest on the word knowledge, word discrimination, and reading subtests of the *MAT* in grade two also. No significant sex-treatment or IQ treatment interactions were noted.

The effectiveness of aural-oral pattern drill practice on the phonology and syntax of oral language patterns and on reading achievement was investigated by Rentel and Kennedy (214). Subjects were 20 randomly selected pupils from each of six randomly chosen classrooms in six Appalachian schools. Three of the classrooms served as controls, with the three experimental classes exposed to 30 pattern-drill lessons over a six-week period. The lessons, each approximately 15 minutes in length, consisted of tape presentations of sentences which the experimental group were to imitate orally. The lessons emphasized standard English counterparts of identified aspects of the nonstandard Appalachian speaking patterns. Criterion measures consisted of 20 recorded test frames to assess phonology and syntax and the Word Reading subtest of the *Stanford Achievement Test (SAT)* to assess reading ability. The mean number of phonological deviations from the standard pattern did not differ markedly for the two groups. However, control classes exhibited almost twice as many structural deviations as did the experimental classes, a difference found to be statistically significant. No significant difference was observed for the two groups on the *SAT*.

A comparison study of the effectiveness of the *Diacritical Marking Medium (D.M.M.)* and traditional orthography *(T.O.)* was carried out in three British primary schools by Johnson, Jones, Cole, and Walters (143). Books already in use were modified to conform to the *D.M.M.* system to be used with the experimental groups. Cues

were faded from the books beginning in Book 5, and in Book 6 only new words were modified. Teachers were assigned randomly to either a control or an experimental group. Children involved in the study were pretested and post-tested on the *Burt Word Reading Test*. The *D.M.M.* groups were also tested on the *Burt* in modified form. Thirty pairs of children matched for sex, age, IQ, number of terms in school, and social class were identified; and comparisons were made on them as well as for the total group. With both matched pairs and with the randomly matched groups, the *D.M.M.* children had higher reading scores than did T.O. children. Analyses of spelling and of free writing indicated that *D.M.M.* children were superior in those areas also.

Three instructional strategies were compared by Shapiro, Willford, and Shapiro (241) to discover their measured effectiveness as applied to the reading, spelling, and language achievement of children undergoing transition from i.t.a to T.O. Twelve second-grade classes were randomly assigned to one of three transitional strategies. All of the students had received their basic i.t.a. instruction through the same i.t.a. reading series. Strategy I included the transitional phase instructional procedures of the i.t.a. reading series. Strategy II was an experimental program designed for the Greater Cleveland Reading Program and consisted of 87 instructional units including a teacher's manual, student workbook, wall charts, flash-cards, and two transitional readers. In Strategy III, pupils made immediate transfer from i.t.a to T.O. without exposure to any instruction of transitional elements. Teachers were trained to ensure familiarity with the program they were to use. In addition to the *Lorge-Thorndike Intelligence Test*, two pretests were administered. Form X (i.t.a. version) and Form W (T.O. version) of the *Stanford Achievement Test (SAT)* were used to provide initial achievement levels. Other forms (T.O. version) of the *SAT* were administered to all pupils when Strategy I groups had completed their changeover and again when the Strategy II groups had finished their series of lessons. Analysis of covariance of post-transition scores disclosed that all groups at the end of the transition had made gains over their pre-transition level of reading achievement. Within each treatment group and on each subtest, there were statistically significant changes in the measured level of achievement over the treatment period. In particular, however, the instructional strategy involving

the methods and materials of the Strategy II group produced, in general, the best results. However, there were no significant differences among the three instructional groups on reading comprehension.

Klausmeier, Sorenson, and Quilling (156) compared word recognition performances of pupils in two schools before and after the *Wisconsin Design for Reading Skill Development* was implemented. The system involves individually guided instruction and has seven major components. They involve organization, instructional programing, curriculum materials, measurement, home-school communication, a facilitative environment, research and development. One aspect of the year-long study showed that 281 were acquiring mastery of subskills in word recognition at a rate that would enable most students to achieve independence by the third grade of school, or earlier. Another aspect of the study revealed that a comparison of per cent of children who mastered various reading skills before experience with the individually guided instructional program to the per cent of those who had mastered these various skills after one year of its use at the school disclosed that more of the experienced pupils attained higher per cent of mastery of skills than the inexperienced pupils. Similarly, based on the *Doren Diagnostic Reading Test of Word Recognition Skills*, the experienced pupils attained higher mean scores than did the pupils with no experience with the system.

First graders with poor prognosis of reading success were subjects in a study by Cramer (59) to ascertain the effect of a highly structured form of individualized instruction by teacher aides on reading achievement. Children who ranked in the lowest percentiles of the *Metropolitan Readiness Tests* were assigned randomly to experimental and control classes. In addition to the regular basal reading program, the experimentals were tutored in daily sessions of 15 minutes each by trained aides who followed carefully prescribed procedure in an approach called "programed tutoring." Aides were given 35 hours of group instruction in tutoring techniques. The non-tutored pupils, or controls, received only the basal reading program without any supplementary instruction. At the end of a year's instruction, post-test scores were obtained from 30 pairs of subjects on the *Metropolitan Achievement Tests*, Primary I Battery. A comparison of mean scores between the two groups showed that the tutored pupils scored significantly higher in both the Word Knowledge

and Reading subtests of the *Metropolitan* than did the controls. No significant difference was found between the two groups on the Word Discrimination subtest.

To determine the effect of using programed material to teach young children phonics, Watkins (286) matched 12 British five year olds into six pairs according to age, sex, social class, nonverbal intelligence, reading levels, and knowledge of letter sounds. Members of each pair were assigned randomly to one of two groups. One group was taught with the use of programed materials, and the nonprogramed group was taught with materials designed to cover the letter-sounds and vocabulary of the programed materials, but specifically not using a programed approach. Each group had a 15-minute lesson each day for a nine-week period. Pretest and post-test results were secured on the *Neale Analysis of Reading Ability* for knowledge of letter sounds for five of the six pairs; significant differences were not found in the comparison of mean scores.

To ascertain whether a token program could increase reading performance in a normal classroom setting and to test the feasibility of a token program monitored by the children themselves, Winett, Richards, and Krasner (299) reported on five subjects designated as target children from among 25 second graders in the experiment. The classroom was organized on an informal basis, and the reading period was structured as an individualized program. Carefully developed procedures were established that governed the behavior of the child-monitors, who rewarded the subjects with tokens according to prescribed rules of conduct during the reading period. Employed were a system of observations by raters as well as a filmed account of the procedures to verify the amount of reading during a series of 20-second observational periods for two consecutive days. A child was rated as "reading" if during the entire 20-second interval he constantly looked at a book or was doing language arts. On two separate periods of observation, the group of target subjects showed higher per cent of reading when their performance was compared to their baseline performance recorded at the start of the experiment. Also noted were a marked decrease in noise level of the class and less inappropriate wandering about by the subjects in the classroom.

Swalm (266) examined the relative effectiveness of oral reading, silent reading, and listening on comprehension as assessed by a cloze test. At each of the three grade levels, 108 pupils were assigned to either a listening, oral reading, or silent reading treat-

ment group by a stratified randomization procedure based on reading ability. The identical story was used across treatment groups with a different story for each of grades two, three, and four. The number of words in the selections ranged from 261 to 287. Comprehension was assessed by means of a cloze test using a 10 per cent random deletion pattern, omitting only lexical words. In the oral reading treatment, pupils read the story and the cloze test aloud. The silent reading group read the story and the cloze test silently, writing in answers in the blanks. In the listening group, children listened to both the story and the cloze test on a recorder. Responses were taped. Analyses of variance techniques were used in analyzing the data and following by *Tukey's Honestly Significant Difference Test* when F ratios were found to be significant. Results were analyzed for total group in each method and also according to pupils' reading levels. When all pupils were considered together, a significant difference was found only at grade two where the oral reading group scored significantly better than did the other two. When scores were analyzed by reading ability level, there was a tendency (not significant at all grade levels) for above-average readers to comprehend better when reading than when listening. For both average and above-average readers there was a tendency for silent reading comprehension to be slightly better than oral reading comprehension at grades three and four; but again the difference was not significant. For below-average readers, silent reading produced the poorest comprehension results at all grade levels with listening giving the best results.

V-6 Teaching reading—grades four to eight

Five experimental classes of 110 pupils and five control classes of 115 pupils in fourth grades were randomly selected from different schools in Florida by Crews (61) to assess the effect of a linguistic grammar approach on writing and silent reading comprehension. All subjects received 45 minutes of instruction for three days per week from October to May. The controls received instruction using materials which were essentially traditional in approach. The experimentals were taught with two texts, *A Linguistic Approach to Writing Discovery 1* and *Discovery* 2, including program-related worksheets. All subjects received the same approach to the teaching of reading and other language arts. Pre- and post-writing samples were taken from each pupil to evaluate progress in diversification of sentence structure. A comparison of changes in variety in struc-

ture between the two groups favored the experimentals, but analysis of gains made in reading comprehension based on scores on the *Gates-MacGinitie Reading Test:* Survey D favored the controls.

Draper and Moeller (71) reported on the St. Louis Vocabulary Development Project and the impact on spelling, vocabulary, and reading achievement of intermediate grade students who received instruction. The project taught 1,800 new words to 24,000 fourth-, fifth-, and sixth-grade pupils in 90 radio programs aired three times weekly from September through May, 1969-70. Special focus of the project was placed on deductive, direct teaching of word meanings with illustrations, including attention to dictionary spellings and symbols. Synonyms, antonyms, homonyms, and variant word forms were also stressed. Words for the lesson were selected from Thorndike and Lorge's *The Teacher's Word Book of 30,000 Words.* Comparisons were made on pretest, expected post-test, and post-test scores of subjects on the *Iowa Tests of Basic Skills* and *Lorge-Thorndike Intelligence Test.* With the exception of the sixth-grade reading scores, results show that children achieved above the expected gain levels based on prior rate of learning on all measures. Most gains were three to four months above expected scores.

Twenty pairs of sixth graders who were matched for IQ were selected by Engle and Cooper (76) in a study comparing academic achievement in graded and non-graded schools of Dartmouth, Nova Scotia. Two schools, one graded and one non-graded were identified for this study by means of a teacher-completed questionnaire that ranked schools according to their "gradedness." The reading and language sections of the *California Achievement Tests* were administered to each pupil in the sample. Analysis of data showed that mean scores favored subjects in the non-graded school on all measures except spelling.

Using about 400 children in fourth, fifth, and sixth grades from two Southwestern schools, Singh (250) explored the effect of individualized enrichment homework on academic achievement as it relates to total reading development. Homework was assigned to the treatment group in the areas of reading, language, spelling, arithmetic, science, and social studies. Two assignments in each subject area were given every four weeks during a period of 16 weeks. Minimum time was set for each assignment, but no maximum time limit was set. Although children were encouraged to complete their homework, they were not required to do so. The *Otis Quick-Scoring Mental*

Ability Test was used to assess scholastic aptitude and the *Stanford Achievement Tests* were used as a measure of academic achievement in the subject areas. Also employed were parent and student questionnaires to evaluate the homework program. Statistical treatment on collected data consisted mainly of two-way analysis of covariance for fixed effect design. The results indicated that homework had a positive effect on reading behavior, including performance on measures of arithmetic computation, arithmetic concepts, arithmetic applications, and social studies; but there were no differences with respect to spelling or science. Both students and parents reacted favorably, in general, toward the homework assignments.

Sinks and Thurston (251) compared the academic achievement gain in word meaning, paragraph meaning, spelling, word study skills, and language usage of 18 third and fourth graders using a typewriter with 18 third and fourth graders not using a typewriter. The subjects were matched on the basis of motor dexterity as determined by the *Lincoln-Oseretsky Motor Development Scale (LOMDS)*. The 36 subjects attended a six-week summer session of half days and were given different forms of the *Stanford Achievement Test* as pretests and post-tests. For a half hour on three days each week the experimental group was given instruction in typing and the control group was given experiences of a psychomotor nature in the gymnasium. For purposes of analysis, subjects were divided into four levels of motor development as determined by scores on the *LOMDS*. Analysis of variance technique in comparison of mean gain scores tend to favor the high motor dexterity subjects in all achievement areas except spelling.

Two classes of 12-year-old Scottish boys of below-average academic ability were the focus of a study by Shiach (245) in an assessment of the effect of a short course using *SRA* materials. The experimental group of 20 boys made intensive use of an *SRA Laboratory 2a* materials in addition to the normal English curriculum. The control class of 17 boys continued with their usual English curriculum. During the nine-week experimental period, four periods of the week, each of 45 minutes, were given to the *SRA Laboratory*, divided into three periods on power builders and one on rate builders. The *NFER Sentence Reading Test 1* was used to secure test data. Analysis of covariance of the data failed to show any significant difference between the two groups over the period of the study.

From 29 fifth-grade classes of New South Wales schools in Australia the reading progress of 404 pupils who used the *SRA Reading Laboratory* was compared with the progress of 374 pupils who followed a standard reading program over a 12-week period. The reading skills considered were Word Knowledge, Speed of Reading, and Reading for Meaning as measured by the *Australian Council for Educational Research Silent Reading Test* and the *Schonell R-4 Silent Reading Test*. Moore (183) reported that the *SRA* group demonstrated, on the average, 28 per cent more improvement in scores between pretest and post-test than did the other pupils on the measure of Word Knowledge. No significant differences were noted between growth in mean scores on Speed Reading, but on Reading for Meaning, the *SRA* group showed 11 per cent additional improvement in scores over that shown by the control group. Comparisons were also reported on performances between the two groups on measures of verbal and non-verbal intelligence under pretesting and post-testing conditions.

V-7 Teaching reading—high school

A program designed to increase commitment to improving study habits and techniques for doing so was described by Harris and Ream (121). Subjects were high school students attending a summer session. Some were volunteers and others were non-volunteers from English and geometry classes. Ten lessons were presented with only one volunteer student present for all lessons. Summer school grades were used to evaluate the effectiveness of the program. Students who participated in the instructional program tended to have a higher grade-point average than those who did not.

A summer university reading improvement course for Upward Bound participants was analyzed by Gwaltney (110). The subjects of the study were 60 high school sophomores and juniors who were randomly assigned to one of two groups. The experimental group enrolled in a seven-week reading improvement course. The control group received no reading instruction. The subjects were divided into three sections for instruction and attended class five mornings per week for 50 minutes. A variety of instructional materials was employed. A battery of pretests and post-tests, including delayed 10-week post-tests, were administered. Pretests included *Kuhlman-Anderson Test, Brown-Carlsen Listening Comprehension Test, California Test of Personality, Edwards Personal Preference*

Schedule, and the *California Reading Test (CRT)*. The post-tests and delayed post-tests were different forms of the *CRT*. Analyses of covariance with post-test total reading scores and delayed post-test reading scores disclosed no significant effect of the experimental treatment on the adjusted post-test and on the adjusted delayed post-test reading achievement scores.

V-8 Teaching reading—college and adult

For a period of 11 months, Butcofsky (41) analyzed the study habits of 302 college freshmen who sought help at a university Learning Skills Center. The *Preston-Botel Study Habits Checklist* was administered to 169 male and 133 female students. Items checked in the last two columns of a five-column rating scale were identified as "inferior study practices" while items checked in the first two columns were regarded as "good habits." Male students accounted for 63 per cent of the 2,961 inferior study practices that were checked. Nearly half of the students had inferior study practices related to notetaking. Among other inferior study practices relating to reading were failure to read sources other than textbook at least half of the time, not using the table of contents of a textbook as a frame of reference, not using questions to guide reading-study on a regular basis, not regularly using clues such as headings, summaries, and graphics, and word-by-word reading.

In a report by Colvin (55), entering freshmen scoring below the fiftieth percentile on the *Cooperative Reading Comprehension Test* were randomly assigned to either a control group or to one of four different experimental sections to assess treatment effectiveness. Of the four experimental groups, Group I used films, lecture, discussion, programed text, and teacher made exercises; Group II used films, lecture, and a programed text; Group III used a lecture and a programed text; and Group IV used programed text only. All groups met two hours a week over a 12-week period. An alternate form of the *Cooperative Reading Comprehension Test* and end-of-semester grade point averages were used to evaluate growth. No treatment was found to bring about significantly greater improvement on reading test scores than any other approach. All groups earned essentially the same grade point average. Student evaluations indicated greater satisfaction with approaches I and II than with others.

Study orientation, reading comprehension, reading rate, and grade-point average were dependent variables in an experiment by

Di Salvi (67) on the effects of a remedial program for undergraduate evening students. From 321 students enrolled in an introductory psychology course, 100 volunteers were randomly assigned to four experimental groups and one control group on two levels—those with college experience and those without it. Five degrees of treatment were prescribed over a 12-week period in fall semester. Three groups met one hour per week, while the fourth met two hours per week. One group (A) received instruction in study techniques only; a second (B), in reading improvement only. One of the one-hour-per-week classes (C) and the two-hours-per-week class (D) received instruction in both. Pretest and post-test scores were secured on the *Brown-Holtzman Survey of Study Habits and Attitudes* and the *Davis Reading Test*. Also, data were obtained on fall and spring semester grade-point averages of the subjects. Analyses of covariance were conducted among the treatment groups. Differences between means of all groups were not statistically significant for any dependent variable except reading rate which was also affected by the amount and kind of treatment. Groups C and D obtained significantly higher scores on this variable than did the other treatment groups. There were significant differences between treatment volunteers and non-volunteers on study orientation, level of comprehension, and speed scores.

Rankin (211) focused on internal or intra-article reading flexibility to be found in college students. Subjects were selected on the basis of placement in the bottom third of the college freshman class as determined by scores on a standardized reading test. Comparable forms of the *Diagnostic Reading Test:* Survey Section, comprehensive subtest, were given before and after completion of the one semester course. Students were instructed to read as rapidly as possible with understanding and to underline the word they were reading every 15 seconds. A flexibility coefficient was then developed for each each student by computing a Person coefficient of correlation between his successive rate measurements for 100-word segments and the cloze score readablity measurements of each segment. The author notes that the degree of flexibility among readers increased with training.

A description and evaluation of a summer reading program designed for socially disadvantaged incoming freshmen were presented by Kling (157). The 61 incoming freshmen were given a total of 22 hours of instruction and testing over a two-week period. Included in the instruction were the core reading program, a vocabulary

and study skills course, and an individualized reading class. Pretest and post-test assessment on alternate forms of the *Nelson-Denny Reading Test* was the basis for formal evaluation. Significant gains in vocabulary, reading rate, and comprehension at or above the .01 level were found.

Thirteen black adults from itinerant families and four white adults participated voluntarily in a basic education program designed to explore the effects of a token reinforcement system on the reading and arithmetic learnings of adults with minimal skills. Thirty weekly instructional periods of approximately two and one half hours duration were conducted by four volunteer teachers providing small group and individual instruction. Published materials used were *The Mott Basic Language Skills Program* and *News for You*, a high interest-low vocabulary weekly newspaper. Students were given tokens to reinforce specified reading and arithmetic behaviors. The tokens could in turn be traded for a variety of consumer objects. Grade level gains were compared by Heitzman and Putnam (122) from pretest and post-test scores using the *Wide Range Achievement Test* in terms of gains expected for each student. Gain expectations were set, predicting that 80 per cent of the students would make 1.5 years growth after the instructional period. Results of the study showed that 65 per cent or eleven of the subjects confirmed expectations for reading growth.

V-9 Teaching materials

The vocabulary of five recent basal reading series was checked by Johns (140) against the *Dolch* list of words to determine whether the *Dolch* words still comprise 50 to 70 per cent of the words in the reading series. Calculated was the per cent of the *Dolch Basic Sight Words* found in pre-primers through sixth-grade readers of the five basal series. In pre-primers and primers, each page in each book was checked for *Dolch* words. The total frequency of *Dolch* words found was then divided by the sum total of all the words to determine a percentage. In first through sixth readers, 300-word random selections were chosen from each third of the book. The total frequency of *Dolch* words in that particular book was then divided by 900 for the percentage. The results showed that approximately 50 to 70 per cent of the words used in current basal readers are on the *Dolch* list. At the pre-primer level the range of *Dolch* words appearing in readers was from 40 to 79 per cent; at the primer

level, from 44 to 72 per cent; and at grade six, from 51 to 58 per cent. For all series combined, the per cent of *Dolch* words at each grade level, 1 through 6, was 66, 61, 52, 55, 55, and 55 respectively. High agreement was noted when results of the present study were compared with results of the original study by *Dolch* in 1941.

Smith (252) ascertained the readability levels of word problems in the sixth-grade texts of six arithmetic series and compared the results with the readability levels of the written problem sections of three achievement tests. The *Dale-Chall* formula was used for determining readability level. The achievement tests used were the *Iowa Test of Basic Skills*, the *Metropolitan Achievement Tests*, and the *S.R.A. Achievement Series*. According to the findings, the raw score for readability of sixth grade word problem samples for each book was within the grade level intended. However, when the range in terms of corrected grade levels was calculated, samples from four of the books ranged as high as seventh-eighth grade. The readability levels of achievement test word problems were at intended levels or below.

The validation of a skill-centered approach was reported by Askov, Otto, and Fischbach (11) to support a rationale for development of a specific skills approach in Adult Basic Education reading classes. The skill-centered program was limited to the word attack skills from the *Wisconsin Design for Reading Skill Development Project*. Children in grades one through six enrolled in a school using the *Wisconsin Design* were used as subjects in the study to assess program validity. At each grade level, subjects were administered the *Wisconsin Tests of Reading Skill Development*: Word Attack to measure mastery of specific skills and the appropriate level of the *Stanford Achievement Test* to measure reading attainment. At first grade, the *Metropolitan Readiness Tests* were given. The test data were analyzed by multivariate analyses of variance to determine the regression of the standardized test scores on the mastery level score that showed the number of skills mastered at a given level. Relationships found were positive in that as mastery of specific skills increased so did reading performance, except at the second grade level where reading performance did not always increase as mastery level increased. Outlined in the report was a scope and sequence of the word attack skills to be taught organized in four levels of difficulty.

The reading ability of 358 students at a community college and the readability of 20 assigned texts were determined by McClellan

(176), who wished to ascertain the appropriateness of textbooks intended for use by the subjects in the study. The *Nelson-Denny Reading Test* was used to obtain the reading scores. The readability level of each text was secured with the use of the *Dale-Chall Readability Formula*. Eight of the texts had a readability score above the sixteenth grade level, and less than 30 per cent of the students would have been able to handle the texts. In general, the results indicate that the readability levels of the texts being used tend to be significantly higher than the reading levels of the students using the texts. Of particular importance is the finding that texts used in the lower levels and non-credit type courses are written on a more difficult readability level than those used in the courses for college credit.

Quilling and Otto (209) presented the evaluation of one element, Word Attack, of the *Wisconsin Design for Reading Skill Development*. Included in the evaluation were scores on criterion-referenced tests and the *Doren Diagnostic Reading Test*. In one school the Word Study Skills subtest of the *Stanford Achievement Test* was given, and in a second school the *Gates-MacGinitie Reading Test* was given in two successive years. On the *Doren* results favored the groups participating in the program significantly in one school but not in the other. On the *Gates-MacGinitie*, positive results were obtained for growth between the first and second administrations for one school. At the other school, shifts in the distribution of scores from year to year were minor.

V-10 Corrective and remedial instruction

A study by Lane, Pollack, and Sher (161) sought to discover the effect of the tutoring role on the reading and personal behavior of disruptive adolescents. Eight adolescents with reading difficulties were selected from the eighth and ninth grades of an Eastern urban junior high school to tutor third- or fourth-grade boys who had reading problems. The tutors were trained in the use of a programed phonic-linguistic approach which taught reading, writing, and spelling simultaneously. The adolescents tutored their younger subjects twice a week on a one-to-one basis for seven months. Scores were obtained from the *Metropolitan Reading Test* as pretest and post-measures for tutors and those tutored as well as results from pre- and post assessment of behavioral changes in the tutors. On the average, the tutors made a 19-month reading gain and the primary boys showed a

growth of 14 months in reading. A lessening of the disruptive behavior was noted in the post evaluation of the adolescents.

A sample of 10 third graders who had severe reading problems was used in a study by Wadsworth (284) to investigate the application of reinforcement techniques to cases of learning disabilities. A point exchange system was used according to behaviors to be reinforced. The treatment period was delineated into four stages over 13 months, to involve 1) instruction in the classroom with learning disability consultation, 2) tutoring in a reading clinic, 3) instruction in learning disabilty class, and 4) special instruction in a resource room setting for different stages. During the first stage in the regular classroom, baseline data were obtained using the *School Behavior Test (SBT)* and the *Slosson Oral Reading Test (SORT)*. At the beginning of the second stage, which extended from June to September, the *SORT* and *SBT* were administered again. Stage II involved three 45-minute tutoring sessions per week. The *SORT* was given again just prior to the beginning of Stage III, which lasted approximately three months. During Stage III a point system related to social and academic behavior was instituted. The *SBT* and *SORT* were given again at the beginning of Stage IV and also as post-tests in May. Mean expected and actual reading grade scores were compared at the end of each stage, showing significant differences in favor of actual gains in Stages III and IV where instruction was over long periods of time. Findings between the association of behavior and reading performances showed that, in general, poor behavior is related to poor reading.

To assess the effectiveness of tutoring underachievers in reading and writing, Shaver and Nuhn (243) used 46 students each from fourth, seventh, and tenth grades as experimental and 20 students as controls. Underachievers were determined on the basis of discrepancies between their performance scores on the *Sequential Tests of Educational Progress (STEP)* and their expectancy scores on the *California Test of Mental Maturity*, using correlations coefficients and a linear regression. Tutoring was arranged on a one-to-one basis or a one-to-three basis and was conducted one hour per day for a school year. Controls remained in the regular class. The tutors were selected on the basis of their own *STEP* test performance and other criteria and were given a two-week workshop. Pretest and post-test data were collected from the *STEP* tests that were administered not only before and after the tutoring year but again

two years later. Grade point averages were also collected. Comparison of mean scores favored the tutored group at all three levels and were sustained two years later for the subjects tutored as seventh and tenth graders. At all three levels, the experimental attained significantly higher frequencies of students who reached their predicted potential or better than did the controls. This difference was sustained two years later.

A remedial reading program for 10 fourth-grade inner city disabled readers was reported by Willis, Morris, and Crowder (298) in a study that employed adolescents as behavioral engineers. The report described four components of a remedial program designed to develop an effective and inexpensive approach to deal with reading problems in the elementary school. Central to the program was the use of capable eighth-grade adolescents as behavioral engineers to dispense token rewards and praises for acceptable reading behavior to the subjects who were in the remedial program. Based on pretest and post-test results on the *Slosson Oral Reading Test*, the fourth-grade subjects attained a mean reading gain of 1.2 years during the 75 days of treatment.

Kimble and Davison (152) reported on the effectiveness of a corrective reading program enrolling 53 American Indian youth designated as disadvantaged. Students were retarded a minimum of two years but were in the normal range of intelligence. They were assigned to classes that ranged between 10 and 15 in size and that met daily for 50-minute periods for one school semester. The program offered a variety of reading activities including materials for the development of word analysis skills, vocabulary, comprehension, and study skills. A reward system was employed which entitled a student to receive various gifts, such as portable radios, watches, and cameras for attaining a specified level of advancement in reading. Emphasis was placed also on inservice training of teachers. Pre- and post-measures used were the *San Diego Quick Assessment Check* and the *Nelson-Denny Reading Tests (NDRT)*. Mean differences on reading scores showed significant gains of .6 years for Vocabulary and 1.3 years for Comprehension on the *NDRT*.

Eight second-grade inner-city school black children with clear reading disability were taught in an experiment by Rozin, Poritsky, and Sotsky (224) to read English material written with Chinese characters. Tutoring sessions were held lasting 20 minutes to one hour approximately two or three times a week for three months.

A total of eight to 14 hours per child was involved. The material to be taught consisted of 30 Chinese characters which were read in their actual English translation. The symbols were read from left to right. For final evaluation of performance, the children were presented with a set of sentences that incorporated all of the 30 symbols taught. In all cases, no cues or corrections were provided. The results showed that all of the children read, in general, the Chinese test sentences adequately. The authors felt that the discrepancy between the children's growth in the ability to read when Chinese characters were used as opposed to when the traditional alphabet was utilized might mean that the phonemic representation of our present system contributes to reading difficulty. They hypothesize that the syllable might be a more appropriate vehicle for introducing reading.

Sabatino, Spidal, and Ohrtman (231) reported a study on a visual perceptual training program used with children who were failing academically in the first three grades. All children attended a six-week summer program for the learning-disabled. They were identified as underachieving a year or more in both word recognition and reading comprehension, as of normal intelligence, and as having a perceptual integrative problem (auditory, visual, or auditory visual). The perceptual difficulty was specified as a year or more of deficit in comparison with the language developmental age as assessed by the Verbal part of the *Wechsler Intelligence Scale for Children (WISC)*. Perceptual abilities were assessed by the *Bender Visual Motor Gestalt Test (BVMGT)*, the *Test of Auditory Perception (TAP)*, and *Birch's Visual-Auditory Integration Test (AVI)*. Other tests administered included the *Wide Range Achievement Test (WRAT)*, *Gates-MacGinitie (GMRT)*, and a section of the *Illinois Test of Psycholinguistic Abilities*. Children were randomly assigned to either experimental or control conditions. Experimental materials were designed to improve discrimination and memory for size, shape, and other physical dimensions and characteristics of letters and words; materials were presented on a machine in a programed format. Control subjects attended a special training activity 20 minutes daily to minimize the Hawthorne Effect. Pretests were given prior to initiation of the experimental program and post-testing occurred one month following termination of the program. Experimental subjects were found to have made significant gains between pretest and post-test scores on the *WRAT*, *GMRT*, and the Memory

section of the *BVMGT*. Control S's made no significant gains on any measures. Sex was found to be a significant factor growth in reading comprehension with girls in both groups achieving greater gains than boys. The data supported the conclusion that visual perceptual behaviors are modified by a training program but that auditory perceptual development is not.

Twenty boys ranging in age from 14.6 to 16.6 and adjudicated as juvenile delinquents were the subjects in the report by Gormly and Nittoli (104). The boys who had been identified by teachers as needing remedial reading instruction were exposed to a program graded in linguistic complexity and graduated in 12 units of mastery. Scores on the *Gates-MacGinities Reading Test*, Survey D, were used in assigning boys to the appropriate level within the reading program. Subjects selected their own stories within each mastery unit level and maintained records on stories read and on the accompanying test performance. When five stories within a given unit had been read with a 70 per cent comprehension level on the tests, students could advance to the next level. An alternate form of the *Gates-MacGinitie* was used to evaluate growth at the end of the summer school session. Change scores were tested for statistical significance against the expected growth increase. Statistically significant increases were found in vocabulary, accuracy, and speed subscores. Reading improvement was not found to be associated with IQ.

Emans and Urbas (75) compared the effectivness of two reading programs for underachieving high school students. Two experimental groups, each with 20 students achieving at least two years below their reading expectancy, were taught three days a week for a semester. Experimentals were matched on a variety of variables, including sex and intelligence. One group received instruction involving the use of a mechanized reading laboratory under the direction of a trained developmental reading teacher. The other group received instruction involving the use of *Reader's Digest* and the *SRA Reading Laboratory* materials under the direction of an English teacher untrained in teaching reading methods. An analysis of scores on the *Gates Reading Survey* showed no significant differences between the performances of the two groups except on the speed and accuracy measure in favor of the mechanized reading laboratory group. Both groups demonstrated some gains in overall reading achievement. On rate of reading story-type materials as assessed by the *Diagnostic*

Reading Test: Survey Section, the mechanized reading lab group showed significant (.002) gains but the other group did not.

A report presented by Schwarz and Cook (238) viewed the relationship of teachers' expectations to the academic progress of their pupils. The 18 classrooms involved were all special education classes for the educable mentally retarded. Academic expectancy was obtained by asking each teacher to rate the extent of improvement each pupil in his class could be expected to show with respect to subject matter skills. Children were followed for three semesters. *Wide Range Achievement Test* scores were obtained at three times. A coefficient of correlation of .13 (not significant at the .05 level) was found between gain in reading and academic expectancy. A stepwise regression analysis was then performed with the academic expectancy scores predicted by CA, IQ, reading, spelling, and arithmetic scores and 18 vectors associated with the class membership of the pupils. Reading was found to contribute only 1.19 per cent of the variance of the academic expectancy scores.

V-11 Teaching—testing

Two trained and experienced clinic teachers, one black and one white, were selected by Rystrom and Cowart (230) in an experiment to determine the effect of race of tester on the word recognition scores of subjects. Each teacher administered 110 items of the *Dolch Basic Sight Word Test* to second graders. The white teacher tested 14 white and 15 black subjects. The black teacher tested 15 black and 15 white subjects. The test results were analyzed using analysis of variance procedures. The black students tested by the white teacher recognized fewer words correctly than did the pupils in the other three groups.

At least four reports dealt with aspects of the *Peabody Picture Vocabulary Test (PPVT)*. The temporal stabilities of various performances obtained on the *Peabody* were studied by Raskin, Offenbach, and Scoonover (212) over two different six-month periods in two groups each of 17 kindergarten and 22 third-grade children. For half the children (summer group) in each grade, the *PPVT* was administered in March and September with a summer intervention. The other half (school-year group) were tested in December and May. For all groups of children the mean mental ages (MA's), IQ's, and chronological ages (CA's) on test-retest administrations were

compared and correlated. For the younger school-year children the increases of MA and IQ were significant, but those for comparable summer children were not. For both groups of older children the MA and IQ differences were almost identical; their MA scores increased significantly while their IQ ratings did not.

The primary purpose of the research by Jerrolds, Callaway, and Gwaltney (138) was to determine whether the *Peabody Picture Vocabulary Test (PPVT)* and the *Ammons Quick Test (QT)* provided accurate estimates of intelligence for children being screened for remedial reading programs. A secondary function was to examine the relationship of the *Gray Oral Reading Test (GORT)*, *Spache's Diagnostic Reading Scales (DRS)* and the *University of Georgia's Informal Reading Inventory (IRI)* to determine reading performance. In addition, the consistency of the tests of potential and performance for classifying children as non-disabled, disabled, or seriously disabled readers was examined. The 50 subjects ranged in age from 7 to 16 and had been referred to a reading clinic for diagnosis. All subjects were given the *WISC*, *QT*, *PPVT*, *GORT*, *DRS*, and *IRI*. Each child was classified as non-disabled, disabled, or seriously disabled, using mental grade placement and results of each of the three reading tests. *PPVT* mean scores were closer to the *WISC* means than were *QT* scores. Of the 50 subjects, eight were classified on the *GORT* as non-disabled while the *DRS* and *IRI* classified 15 and 10, respectively, in that category. Using the *GORT* scores, seven subjects were identified as disabled and 35 as seriously disabled. With the *DRS*, 12 were classified disabled and 23, seriously disabled. Numbers for the *IRI* were four disabled and 36 seriously disabled. Mean scores on the three reading tests varied approximately half a grade level.

Investigated by Costello and Ali (58) were reliability and validity scores of black urban preschool children on the *Peabody Picture Vocabulary Test (PPVT)*. For reliability values, test-retest correlations were calculated from the *PPVT* administered twice over a two-week period to 31 Head Start children. In addition, a modified *PPVT* was given twice over a six-month period to a total of 67 children, 36 of whom attended a research preschool and 31 of whom were in a Head Start program. The test-retest correlation coefficients were .77 on the standard *PPVT* and .87 for the research preschoolers as well as .80 for the Headstarters on the modified version of the *PPVT*. For validity values, *PPVT* scores were correlated with teachers' ratings of classroom verbal behaviors. Additional validity data were

obtained from the following tests of intellectual behaviors administered to a sample of 60 children: *Stanford-Binet;* two subtests on the *Illinois Test of Psycholinguistic Ability;* colors, counting, and drawing scores on the *Kohn Competence Scale;* 4-point psychiatric ratings of competence, social relationships, speech quality and quantity; and teacher's ratings of competence and need for approval. The coefficients of correlation between the *PPVT* score and the other psychological test scores ranged from .28 to .43.

Ali and Costello (2) explored means of identifying and modifying those aspects of the *Peabody Picture Vocabulary Test (PPVT)* that seemed to have an adverse effect on the performance of culturally different preschoolers from low socio-economic populations. The modified version consisted of 70 items randomized for difficulty level, specified stimulus instructions, and a controlled schedule of verbal reinforcements. To determine test-retest stability of both the *PPVT* and the modified form, the *PPVT* was administered twice with a two-week interval, and the modified form administered twice six months later, also with a two-week interval between test-retest. Two comparable samples from a total of 108 children were administered either the *PPVT* or the modified *PPVT* for comparison purposes of test procedure effectiveness. Test-retest reliability was .86 for the modified version and .77 for the regular version. Results indicated mean differences in favor of the modified version although no significant sex differences were found in performances for either test administration. Of particular interest was the increase in errors in test performances when the reinforcement shedule was decreased.

Hick and Santman (123) developed a new method of scoring letter naming ability of kindergarten children to determine if it was more sensitive to predicting first grade reading achievement than the traditional procedure. The new strategy established a five-point scale for the qualitative scoring of responses to lower case letters. Kindergarten children named lower case letters and one year later were given the *Gates-MacGinitie Reading Test* to assess vocabulary and comprehension. Subjects had mean IQ scores of 119.3 and 120.2 for language and non-language tests respectively on the *California Test of Mental Maturity.* Under old scoring procedures, the average number of letters named correctly correlated .68 with vocabulary and .74 with comprehension. Using the new approach coefficients of correlation of .72 and .71 respectively were found with vocabulary and comprehension.

The predictive validity of various readiness measures was reported in a study by Kaufman and Kaufman (148). A total of 103 Caucasians were administered the three predictor tests in kindergarten, and the data were analyzed on the 80 children promoted to first grade or still attending the same school in grade one. Subjects were from above average socio-economic backgrounds and had a mean IQ of 108. The data collected were 1) *Gesell School Readiness Tests,* which are predominantly perceptual-motor in nature; 2) *Piaget* battery, a 20-25 minute individually administered battery constructed from several of Piaget's tasks; 3) *Lorge-Thorndike Intelligence Tests;* and 4) teething level, a measure assessing the degree to which a child has lost his primary teeth and gained his permanent teeth. Grade one criteria, including the composite score on all six subtests of the *Stanford Achievement Test* (SAT) as well as the grade equivalent scores on the Arithmetic subtest; the Spelling subtest; and the median of the grade equivalents on Word Knowledge, Paragraph Meaning, Word Study Skills, and Vocabulary were used as a total reading score. The *Piaget* and *Gesell* tests correlated .64 with the composite *SAT* score. *Lorge-Thorndike* mental age showed a coefficient of correlation of .58 with the *SAT* composite while teething level correlated only .07 with it. The three predictor tests correlated .73 with the *SAT* composite score. The *Gesell* tests were the highest predictor of the total reading scores (.63).

In a validity study of criteria for determining a student's instructional reading level, Powell and Dunkeld (207) analyzed the ratios of allowable number of word recognition errors to the number of words to be read in passages as acceptable levels among five standardized oral reading tests. The tests were Spache *Diagnostic Reading Scales, Durrell Analysis of Reading Difficulty, Gilmore Oral Reading Test,* and *Gates-McKillop Reading Diagnostic Test.* It was found that all word-recognition error ratios increased in error latitude as the difficulty of the material increased. This finding was used to question the standard of one error in every 20 running words for determining an individual's instructional level without reference to the difficulty of sample passages.

To explore the extent that subjects can perform on reading tests without reading test passages, Applebee (10) truncated two standardized tests for experimental purposes. One experimental version was a reading comprehension measure for third graders and consisted of only questions including their four multiple-choice an-

swers. All test questions were used without providing context or eliminating meaningless items. The second experimental version was a reading rate measure for children in fourth, fifth, and sixth grades and consisted of only the first noun in each passage together with the multiple-choice answers. Several educated adults, eleven high-achieving fourth graders and 19 low-achieving sixth graders were given both versions. Results showed that raw scores means for all groups differed significantly from expected scores by chance in favor of the truncated test performances.

A sample of 189 subjects were randomly selected by Janzen and Johnston (135) in a study to assess the value of scores on reading tests as predictors of success at a community college. Subjects were tested on the *Dvorak-Van Wagenen Diagnostic Examination* and the *Co-operative English Test, Form 1B* as independent measures. For criterion measures, freshman English grades and first semester grade-point averages were obtained. From multiple linear regression analysis of scores between independent and dependent measures, results indicated that scores on the two standardized tests have little value as predictors of performance in freshman courses at a community college.

Three experimental tests were constructed by Tuinman (274), all designed to assess the acquisition of information from reading prose passages. The *Test of Acquisition of Information-Phantasy (TAI-P)* was designed to reduce real-life information in passages and to stress stories of phantasy without semantic distortions. The *Test of Acquisition of Information-Lexical Substitutions (TAI-LS)* was prepared with key words in passages replaced by artificial words. The *Test of Acquisition of Information-Semantic Anomaly (TAI-SA)* was constructed to distort relationships among known events in passages while syntactic relationships remained undisturbed. The experimental tests and the first 40 items of the *Sequential Test of Educational Progress (STEP-40)*, form 3A, were administered to 265 seventh, eighth, and ninth graders. The study sought to evaluate the answerability of test items of the experimental measures under conditions when the passages are omitted and when the passages are included for reading. The performances on the experimental texts were compared with performances on the *STEP-40 Test* under both conditions. The *TAI-P* and the *TAI-SL* showed a reduction in the answerability of test items under the passage-out condition as compared with the *STEP-40 Test*, with both experimental tests enabling students to

guess correctly above chance level. However, this finding was not true for the *TAI-SA*.

Rowell (223) presented the development, reliability, and validity of a tool designed to assess attitude toward reading, *A Scale of Reading Attitude Based on Behavior*. The scale was designed to include attitude toward reading for pleasure, reading in the content areas, and reading in a reading class. A total of 16 items were developed to be answered on a one to five scale. Reliability was established by having one fourth-grade student teacher and three fifth-grade student teachers complete the scale for each pupil in their classrooms. The supervising teachers in the above classrooms were then asked to complete the scale for a random sample of one-third of their pupils. Interrater reliability, using the two ratings, ranged from .76 to .95 with a mean of .88. Validity was determined by comparing the attitude scores given by the student teachers with the supervising teachers' observations of each pupil's reaction to various reading materials and also with their observations of the pupil's attitude toward reading as compared to others in his class. Coefficients of correlation between rankings on the two scores averaged .70 and ranged from .52 to .84.

Weaver and Kingston (288) described the tests devised to investigate language development of first-grade children and offered suggestions to researchers who expect cooperation from schools and young children. The instruments chosen or devised are as follows: 1) an oral cloze to measure the child's knowledge of standard English language structure (function words); 2) an oral cloze to measure lexical words (nouns, main verbs, etc.); and 3) a cloze task to demonstrate ability to reason by analogy. These tests were given during the first months of school. Three similar tests were devised for use in February, except that children circled the correct response chosen from three. In May a standardized reading test, a test of grammar, and a multiple-choice analogies test were given. No data were presented, but the remainder of the article deals with "trials and errors" of research with children in a school setting.

VI. Teaching of atypical readers

Studies in this section dealt with aspects of teaching reading to the blind and visually impaired, to deaf children, and to educable mentally handicapped learners.

The purpose of the study by Harley and Rawls (119) was to compare the effectiveness of six approaches to beginning reading instruction with blind children. Materials in two basal readers, one with a synthetic phonics and one with an analytic phonics program, were presented to children in three Braille media—grade 1, grade 2, and phonemic. The latter was an adaptation of i.t.a. into Braille. Subjects were from classes in six residential schools for the blind with a median chronological age of 7.7. Teachers were enrolled in a three-day workshop prior to the project's start, and the program was carried out for one academic year. Accuracy and comprehension scores on the *Gilmore Oral Reading Test*, scores on the *Slosson Oral Reading Test*, and mental age scores were analyzed in evaluating outcomes. Synthetic grade 2 Braille approaches were found to be superior to synthetic-phonemic Braille approaches. Neither the synthetic nor the analytic approaches showed any overall superiority, although the author reported that scores for the grade 1 synthetic Braille group were suspect because they were unusually low.

Tuttle (279) compared 1) reading by Braille (B), 2) reading by listening to normal recording (N), and 3) reading by listening to compressed speech (C) on an index of learning efficiency. All four forms of the *Reading Versatility Test*, Intermediate Level, were transcribed into each medium. Each subject then took three equivalent forms of the test, and the index of learning efficiency was computed by dividing the number of correct answers by the time. Medians of Braille comprehension scores and of normal recording comprehension scores were then used to identify four groups: 1) those high in both; 2) high Braille readers, low listeners; 3) low Braille readers, high listeners; and 4) those low in both. An analysis of variance technique was used to analyze the various contrasts (B-N, N-C, B-C) across the four groups or levels as well as overall. No differences in comprehension among the three media were found. For each group as well as overall, reading by Braille took almost twice as long as listening to normal recording and about three times as long as listening to compressed speech. For each group and overall, C was more efficient than N or B.

Sykes (268) investigated the problem of whether there was any difference in the effectiveness of large print or standard print used with visually impaired high school students. Two forms of the *Davis Reading Test (DRT)* were used in assessing the students' level of comprehension and reading speed. Each form, already available

in standard 10-point type, was photographically enlarged to 18-point type. Each student then was given the *DRT* twice, once in each size print, with the forms of the test and print size randomly alternated in presentation. Only the first 40 items were utilized in obtaining the scores, and unlimited time was allowed for completion of the test. Additional data collected included a measure of visual fatigue collected by taking an involuntary eye-blink rate count, a measure of reading distance, and a measure of size print preference. The latter information was collected by asking students, at the end of the second test, which size print they preferred. Subjects were classified as legally blind or partially sighted, and data were analyzed for each as well as for the total group. Performance of the two groups did not differ as a function of print size. Both did as well with standard print as with large print on comprehension and speed. No differences were found for the fatiguing effect of the two print sizes for the legally blind, but partially sighted subjects experienced less fatigue with large print material than with small print. No significant differences were found for preferences of the two print sizes.

In a study involving the use of Braille contractions, Rex (215) analyzed vocabulary lists from preprimer through grade three in four basal reader series. The four series were found to use 165 contractions out of the 189 contractions and short form words in the Braille literary code. Of these, 131 were used in all four series. Contractions were introduced most rapidly in the early materials with 60 per cent of all possible ones appearing by the end of grade one. The average per word rate of introduction ranged from one contraction for every two words at preprimer level to one in 50 at the end of third grade level. An additional analysis was made by dividing the contractions into five orthographic categories and presenting the percentage of each category presented at each grade level. It was found that the categories of Alphabetic Abbreviations, Upper-cell Contractions, and Lower-cell Contractions ranged from 85 per cent to 96 per cent presentation of the entire category by the end of grade one.

Based on the findings from the analysis of basal readers, Rex (216) developed a series of 40 programed-type reading lessons to introduce Braille contractions to blind children. Subjects were divided into an experimental group of 16 children who used the new materials and a control group of 11 children who used teacher-selected materials. The program was followed for a period of 40 school days. Pretest and post-test comparisons were made using scores on three sub-

tests of the *Stanford Achievement Test, Primary Battery II* and the Intermediate Literary portion of the *Colorado Braille Battery*. Although the experimental group showed greater gains in performance than the control group, the results were not statistically significant.

McIntyre, Odom, and Byassee (178) studied the discrimination of graphic visual symbols by congenitally deaf children in an attempt to determine if the symbols are learned by a distinctive feature or a prototypic perceptual learning process. Subjects were about 10 years old. Children were first given a common training situation and then assigned to one of three transferable conditions. In the training phase, subjects were asked to identify letter-like stimuli that were the same as a standard. A subject was given feedback following his choice of a stimulus and continued practicing until he reached a criterion of one perfect trial. Immediately after attaining criterion, two transfer trials were given. Stimuli in the transfer phase differed from those used during the training phase, and they determined the two experimental and the control conditions. The prototype condition presented the same standards employed during training but with new transformations; the distinctive feature condition presented new standards with the transformations used during training; the control group received both new standards and different transformations from those employed in training. Subjects in the distinctive feature condition made the fewest number of errors, and the control condition subjects made the greatest number.

Conrad (56) compared two different modes of learning for their effectiveness in aiding reading comprehension of deaf children. Deaf subjects, whose mean chronological age (CA) was about 14, had been previously classified on the basis of short-term memory errors as either using articulatory coding (A group) or primarily using visual coding (non-A group). Hearing subjects were randomly selected from British state schools and had a mean CA of 9½. Each child read six prose passages, and was asked to answer four-item multiple-choice questions over each passage. Passages were read either silently or aloud in alternating order by each subject. When the distribution of errors for the two modes were compared, the non-A deaf group was found to differ significantly from the A-group and from the hearing group. Non-A subjects performed better when reading silently whereas the other two groups showed better comprehension when reading aloud. When reading silently, no significant differences were noted in comprehension between the A and non-A

groups. However, when reading aloud, the A group performed significantly better than did the non-A group. The author suggested that for non-A type deaf children, reading aloud is detrimental to their comprehension.

The effectiveness of systematic use of contingency management techniques coupled with reinforcers was studied by Busse and Henderson (40) in attempting to increase reading achievement of educable mentally retarded children. Reading was taught in 50-minute daily sessions over 81 school days divided in the following manner: 1) a baseline 10-day period when preliminary data were collected against which to compare any changes; 2) an initial modification period of 54 days during which a child could earn free time by increasing his reading rate; 3) a five-day reinforcement withdrawal time during which free time could not be earned; and 4) a second modification period of 12 days when the opportunity to earn free time was reinstated. Data were collected from pretest and post-test scores on the *Iowa Silent Reading Tests* as well as from daily correct and error reading rates maintained on each subject. In addition, records of daily written responses were analyzed. Differences between the pre- and post-scores on the *Iowa* were found to be significant at the .01 level. Growth in individual daily reading rates reached significance at the .001 level with no loss in comprehension.

A detailed account of an instructional program in functional reading for trainable retarded children was published by Brown and Perlmutter (38) who also presented supporting evaluation data. The seven subjects had IQ scores ranging from 39 to 51. The entire program covered approximately 60 days of one-hour-a-day instruction and was divided into three parts. In the first segment, baseline data were collected on how well subjects could label words in sentences, how well they could label and then differentially respond to the words, and how well they could respond differentially after listening to the teacher label the words. In part two, children were taught to label the words using flash cards and to label the words in sentence order and were then evaluated on these two tasks. For the third part of the program, subjects were instructed in correctly labeling the words in the order in which they appeared in sentences and then were evaluated on their ability to respond differentially in labeling and listening to the nine sentences taught. A total of 17 words were taught in the nine sentences. The subjects improved from no correct location responses during the baseline period to almost perfect correct

responses following instruction. During listening, subjects improved from 43 per cent and 53 per cent correct location responses for the two groups formed from the seven children to perfect performance.

A study investigating the training of matching to a sample, using severely retarded children and machine instruction was reported by Harper, Cleary, and Packham (120). Children were given two programs of 100 stimuli each. The simple program contained the four classes of colors, shapes, pictures, and words. Half of the complex program consisted of words containing one of the letters *b, d, p,* or *q,* in either the correct response or in one of the distractors. The other half of the complex program consisted of matching picture/word combinations, matching dot patterns with and without color cues, and matching picture to word. Training was on the *Touch-Tutor* with sessions lasting for 20 minutes. Subjects were tested once a week until the criterion level of 90 per cent accuracy was achieved. Twelve of the 16 subjects reached criterion on the simple program and three of the 12 reached criterion on the complex program. Analyses of the simple program showed that matching pictures was the least difficult task, followed by colors, shapes, and words. For the complex task, most errors arose from reversals *(b-d, p-q),* less with inversions *(b-p, d-q),* and least with rotations *(b-q, d-p).*

Levitt (165) studied the oral reading of retarded children to determine if their errors were qualitatively inferior to those of nonretarded children equated for reading achievement. A total of 13 response categories were used in the analysis. Of these, 10 were error categories consisting of Morphological Error, Non-word, No Response, and seven sub-classes of substitution. The three additional categories were Self-correction, Regression, and Repetition. Response categories were also classified as higher- and lower-order. Higher-order responses were defined as those associated with the presence of multiple cues or with a search for closure; and lower order cues, as those associated with single cues or characterized by inferiority. Analyses were made on three major categories: Multiple cue responses, Simple and Inferior responses, and Search for Closure responses. Subjects were equated for reading achievement on the basis of scores on the *Wide Range Achievement Test (WRAT).* Mean chronological age for retarded subjects was 139.04 months and for nonretarded subjects, 81.25 months. Retarded subjects had a mean IQ of about 65. No intelligence test scores were available for the nonretarded group. The mean *WRAT* scores were 1.81 and 1.84 for

the retarded and nonretarded groups respectively. Raw data for the 13 response categories were converted to ratios for purposes of statistical analysis. Similar error totals were found for the two groups but the error patterns varied. Nonretarded children scored higher than did retarded children in Search for Closure responses whereas retarded children made more errors in the Simple and Inferior category. In addition, retarded children made more Morphological errors than did the non-retarded group. The author points out that the last finding is confounded by the fact that the retarded subjects were disadvantaged and may have had atypical language patterns.

In a study of the effect of context on word recognition, Levitt (164) used children enrolled in public school classes for the retarded and first-grade children attending regular classes. Reading levels for the two populations were equated for both mean and range on the *Wide Range Achievement Test (WRAT)*. Subjects read, in alternate order, 40 words excerpted from a primary level story and a story using the same words. Errors, repetitions, self-corrections, and regressions were all recorded from the oral reading. An analysis of variance technique was performed on population, experimental condition (wordlist vs. text), and order. It was found that context reading was significantly better for both populations than wordlist reading.

Hargis (117) compared the ability of mentally retarded and normal pupils of the same age to complete cloze passages adjusted to their instructional levels. The retarded subjects were 15 with IQ's from 55 to 70; the normals were matched for life age (10 to 12 years) with IQ's from 100 to 155. The *Stanford Binet* for retardates and the *California Test of Mental Maturity* for normals were used to obtain IQ. Each subject first took an informal reading survey with passages from primer to ninth-grade difficulty levels. Passages for the cloze were chosen from basal readers and checked with the *Spache Readability Formula* or the *Dale-Chall* formula so that each pupil would have material of appropriate difficulty. In the 200-word passages, 40 words were deleted. The cloze test was scored two ways: exact reproduction, and exact plus sensible or synonymous words. Differences between the groups on exact words were not significant. However, differences on the second score were significantly (.001) favorable to the nonretarded group. The conclusion was reached that retarded pupils were handicapped in selecting acceptable synonyms from context.

Annotated bibliography[1]

1. ADERMAN, DAVID & SMITH, EDWARD E. Expectancy as a determinant of functional units in perceptual recognition. *Cognitive Psychology*, January 1971, 2, 117-129. (IV-5)

   Compares the performance of 216 undergraduates on a tachistoscopically presented series of tasks when half the group was trained to receive expected spelling patterns and the other half, unrelated letters; then the unexpected patterns were presented to each group to determine the effects of "set."

2. ALI, FAIZUNISA & COSTELLO, JOAN. Modification of the Peabody Picture Vocabulary Test. *Developmental Psychology*, July 1971, 5, 86-91. (V-11)

   Tests a modification of the *PPVT* with the intention of modifying those aspects of the test which have a detrimental effect on disadvantaged children (preschool). Also compares scores of two samples from the same lower-class population on the regular and modified versions of the test.

3. ALLEN, VAN S. An analysis of textbooks relative to the treatment of black Americans. *Journal of Negro Education*, Spring 1971, 40, 140-145. (III-2)

   Examines 42 elementary school texts for the amount and kind of exposure given black people, and hypothesizes the effect on black children.

4. ALSTON, DORIS N. An investigation of the critical reading ability of classroom teachers in relation to selected background factors. *Educational Leadership*, January 1972, 29, 341-343. (II)

   Identifies the nature and extent of critical reading ability of classroom teachers and how their performance relates to their age, sex, teaching experience, and preparation in reading. The subjects were male and female from all age groups and were enrolled in graduate reading courses.

5. AMERICAN INDIAN HISTORICAL SOCIETY. *Textbooks and the American Indian*. Rupert Costo (Ed.), Jeannette Henry (writer). San Francisco, California: The Indian Historical Press, 1970. (III-2)

1. Numbers have been assigned to major and subheadings in the first part of the summary as cross-reference aids. At the end of each item in the *Annotated bibliography*, a number in parentheses shows the classification under which the item is discussed.

Examines over 300 textbooks in history and other social studies areas to determine the treatment of the American Indian in each.

6. ANDERSON, RICHARD C. How to construct achievement tests to assess comprehension. *Review of Educational Research*, 1972, 42 (2), 145-170. (I)

   Reviews research literature on various aspects of comprehension test construction revolving around the theme that whether an item measures comprehension depends upon the relationship of the wording of the test item to the wording of the instruction.

7. ANDERSON, RICHARD C.; GOLDBERG, SHEILA R.; & HIDDE, JANET L. Meaningful processing of sentences. *Journal of Educational Psychology*, October 1971, 62, 395-399. (IV-9)

   Compares recall performance of undergraduate students who read sentences with the last word missing to those who read complete sentences.

8. ANDERSON, RICHARD C. & KULHAVY, RAYMOND W. Imagery and prose learning. *Journal of Educational Psychology*, June 1972, 63, 242-243. (IV-9)

   Instructs 31 high school seniors to form a vivid mental picture while reading a descriptive booklet and instructs 31 more students to simply read the booklet in order to determine whether imagery instructions facilitate learning from prose passages.

9. APPLEBEE, ARTHUR N. Research in reading retardation: two critical problems. *Journal of Child Psychology and Psychiatry*, August 1971, *12*, 91-113. (I)

   Criticizes research in reading retardation on the basis of methodological and conceptual problems. Reviews and suggests possible models of reading disability.

10. APPLEBEE, ARTHUR N. Silent reading tests: what *do* they measure? *School Review*, November 1971, *80*, 86-93. (V-11)

    Discusses the use of silent reading tests as a measurement of reading with reference to two previous studies. Compares the reliability of two types of silent reading tests as to what they measure.

11. ASKOV, EUNICE N.; OTTO, WAYNE; & FISCHBACH, THOMAS. Development of specific reading skills in adult education. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 46-52. (V-9)

Administers standardized reading achievement tests to children in grades one through six and compares scores on these with scores on a word analysis test.

12. ATHEY, IRENE J. Language models and reading. *Reading Research Quarterly*, Fall 1971, 7, 16-110. (I)

Surveys models of language acquisition as related to the reading process.

13. ATKIN, CHARLES K. How imbalanced campaign coverage affects audience exposure patterns. *Journalism Quarterly*, Summer 1971, 48, 235-244. (III-8)

Studies the length and position of campaign news items and their influence on 82 undergraduates, designated as neutral or partisan. Uses a telephone survey of 122 residents involved in an actual campaign situation.

14. AYERST, DAVID. *The Manchester Guardian: biography of a newspaper*. Ithaca, New York: Cornell University Press, 1971. (III-11)

Traces the history and development of the *Manchester Guardian* from 1821 to 1956, dealing with the times and persons who made, changed, and developed the paper.

15. BAILEY, DAVID SHERMAN. Deprivation and achievement as factors in auditory comprehension. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 341-347. (IV-14)

Relates cultural deprivation and achievement of 80 eighth-grade students to auditory comprehension.

16. BAKKER, DIRK J. *Temporal order in disturbed reading: Developmental and neuropsychological aspects in normal and reading-retarded children*. Rotterdam, Netherlands: Rotterdam University Press, 1972. (IV-12)

Describes a series of investigations in which the relationship between temporal order perception and reading were examined. Data were collected using preschool, primary school, and normal and learning-disturbed children.

17. BARGANZ, JEAN C. & DULIN, KENNETH L. Readability levels of selected mass magazines from 1925 to 1965. In George B. Schick & Merrill M. May (Eds.) Reading: process and pedagogy. *Nineteenth Yearbook of the National Reading Conference*, 1970, 2, 26-30. (III-3)

Computes the readability of five popular magazines from 1925 to 1965.

18. BARR, REBECCA C. The influence of instructional conditions on word recognition errors. *Reading Research Quarterly*, Spring 1972, 7, 509-529. (V-5)

Utilizes 41 grade-one pupils in a comparison of the effect of a phonic method and a sight word method on word recognition errors.

19. BAUER, RAYMOND A. & GREYSER, STEPHEN A. *Advertising in America: the consumer view*. Boston: Harvard Business School, 1968. (III-9)

Interviews and analyzes responses of 1,846 consumers, identified as a cross-section sample of American adults, toward advertising and advertisements. A total of 1,536 of these individuals participated in record keeping of their responses to particular ads.

20. BEAVEN, MARY H. Responses of adolescents to feminine characters in literature. *Research in the Teaching of English*, Spring 1972, 6 (1), 48-68. (III-8)

Compiles data from 953 questionnaires given to high school and junior high school students to determine what kinds of feminine characters appeared in the literature read and discussed in school and what books or characters significantly influenced teenagers.

21. BELL, D. BRUCE; LEWIS, FRANKLIN D.; & ANDERSON, ROBERT F. Some personality and motivational factors in reading retardation. *The Journal of Educational Research*, January 1972, 65, 229-233. (IV-12)

Investigates personality and motivational factors associated with retardation in reading achievement in a study of 100 junior high boys.

22. BENNION, SHERILYN COX. Reform agitation in the American periodical press, 1920-29. *Journalism Quarterly*, Winter 1971, 48, 652-659, 713. (III-10)

Divides the magazines of the 1920's into popular, quality, new, and reforming; it studies each group in relation to its approach to reform.

23. BERRES, JEAN L. The daily newspaper as a channel of information on public matters. *Journalism Quarterly*, Winter 1971, 48, 764-767. (III-10)

Analyzes the coverage by two Milwaukee papers of the mayor's speeches for April, 1963, through March 1964. Newspaper coverage was viewed in terms of completeness, accuracy, emphasis, and impression; failure to meet these standards was tallied.

24. BERRY, MARY T.; FISCHER, SHIRLEY L.; PARKER, FRANCES S.; & ZWIER, MARCIA D. Average and superior readers in lab school. *The Reading Teacher*, December 1971, 25, 271-275. (IV-11)

    Attempts to isolate characteristics of 108 "average" and "superior" readers in grades two through eight of a laboratory school.

25. BICKLEY, A. C.; DINNAN, JAMES A.; & JONES, J. P. Oral associates and reading readiness. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 14-16. (IV-7)

    Attempts to identify relationship between oral associates (paradigmatic or syntagmatic) and the reading readiness scores of 52 first-grade pupils.

26. BICKLEY, RACHEL T.; BICKLEY, A. C.; & COWART, HARRY. Oral language responses and reading performance in the intermediate grades. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 11-13. (IV-7)

    Investigates the use of oral language responses as a predictor of reading performance in a study of 52 fourth-grade pupils.

27. BINGHAM, JANE. The pictorial treatment of Afro-Americans in books for young children 1930-68. *Elementary English*, November 1971, *48*, 880-885. (IV-14)

    Assesses the pictorial treatment of Afro-Americans in 41 books from 1930 to 1968.

28. BLANTON, WILLIAM. ERIC/CRIER Report—Language, linguistics, and reading. *Reading World*, December 1971, *11*, 145-160. (I)

    Presents abstracts of studies and writings on language development as it relates to reading readiness and later achievement, on reading materials selection, and on linguistics and reading.

29. BLIESMER, EMERY P. 1970 review of research on college-adult reading. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 361-389. (I)

    Reviews research which appeared between September, 1969, and September, 1970, on college and adult reading.

30. BLOCK, J. R. But will they ever lern to spel korectly? *Educational Research*, June 1972, *14*, 171-176. (I)

Reviews 47 studies, some short range and some longitudinal, which compared the spelling ability of children taught to read by i.t.a. and by T.O., and summarizes the conclusions of those studies for children completing first and second grades.

31. BLOM, GASTON E. Motivational and attitudinal content of first grade reading textbooks. *Journal of the American Academy of Child Psychiatry*, April 1971, *10*, 191-203. (I)

Reviews research from a number of sources on content of beginning reading materials and children's reactions to them.

32. BLOUNT, NATHAN S. Bibliography of research in the teaching of English: January 1, 1971 to June 30, 1971. *Research in the Teaching of English*, 1971, 5, 232-262. (I)

Lists research entries under nine major headings including literature, reading, and oral language.

33. BOWER, THOMAS G. R. Reading by eye. In Harry Levin & Joanna P. Williams (Eds.) *Basic studies in reading*. New York: Basic Books, 1970. Pp. 134-146. (IV-5)

Details several experiments which used college students as subjects and attempted to obtain insight into the visual process nature of reading.

34. BROWN, D. L. Some linguistic dimensions in auditory blending. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 227-236. (IV-6)

Gives 120 preschool-age children the task of blending words from both phonemes and syllables to determine relative ease of vowel-consonant or consonant-vowel blending of two phoneme and syllable words and also double phoneme and syllable blends.

35. BROWN, ERIC & MIRON, MURRAY S. Lexical and syntactic predictors of the distribution of pause time in reading. *Journal of Verbal Learning and Verbal Behavior*, December 1971, *10*, 658-667. (IV-10)

Investigates the predictability of pause time in a 1,537-word message, read orally (divided in half), using 120 college students.

36. BROWN, H. DOUGLAS. Children's comprehension of relativized English sentences. *Child Development*, December 1971, 42, 1923-1936. (IV-7)

Tests the relative effects of age, sex, order, embeddedness, focus, and pronoun on children's comprehension of relativized

English sentences using 96 three-, four-, and five-year-old English-speaking children.

37. BROWN, LES; COOK, ELLEN; & DAVIS, L. ELAINE. Do reading interests affect the child's ability to do critical thinking? *Illinois School Research*, Winter 1972, 8 (2), 23-26. (IV-2)

Analyzes the performance of 68 second-grade pupils according to sex on two critical thinking skills.

38. BROWN, LOU & PERLMUTTER, LUCILLE. Teaching functional reading to trainable level retarded students. In James J. McCarthey (Ed.) *Education and Training of the Mentally Retarded*, April 1971, 6 (2). Pp. 74-84. (VI)

Describes a reading program given seven trainable mentally retarded children, aged 14 to 19, and gives data supporting its effectiveness.

39. BUKTENICA, NORMAN A. Auditory discrimination: a new assessment procedure. *Exceptional Children*, November 1971, 38, 237-240. (IV-6)

Describes the development, administration, and standardization of a non-verbal test of auditory discrimination and its correlation with first-grade reading achievement.

40. BUSSE, LARRY L. & HENDERSON, HYRUM S. Effects of contingency management upon reading achievement of junior high educable mentally retarded students. *Education and Training of the Mentally Retarded*, April 1972, 7, 67-73. (VI)

Conducts a study with 13 educable mentally retarded children ages 12.4 years to 15.11 years to increase reading achievement through the systematic use of contingency management techniques.

41. BUTCOFSKY, DON. Any learning skills taught in high school? *Journal of Reading*, December 1971, 15, 195-198. (V-8)

Reports the findings of a study habits checklist administered to 302 college freshmen.

42. BYRNE, SISTER MARY ANN; FELDHUSEN, JOHN F.; & KANE, ROBERT B. The relationships among two cloze measurement procedures and divergent thinking abilities. *Reading Research Quarterly*, Spring 1971, 6, 378-393. (IV-17)

Explores the relationship between three divergent thinking tests and two cloze tests given to 113 seventh-grade pupils.

43. CALLAWAY, BYRON. Pupil and family characteristics related to reading achievement. *Education*, February-March 1972, 92, 71-75. (IV-15)

Studies 408 fourth-grade children and 400 seventh-grade children to determine the relationship of reading achievement to family income, principal wage earner, occupation, age, IQ, sex, amount of reading material in home, and race.

44. CANE, BRIAN & SMITHERS, JANE. *The roots of reading: a study of 12 infant schools in deprived areas.* Gabriel Chanan (Ed.) London: National Foundation for Educational Research in England and Wales, 1971. (V-1)

Measures reading progress in 12 lower- and four middle-class British infant schools over a two-year period. Analyzes the characteristics of successful and unsuccessful schools.

45. CARROLL, JAMES L. A visual memory scale (VMS) designed to measure short-term visual recognition memory in five- and six-year-old children. *Psychology in the Schools,* April 1972, *9,* 152-158. (IV-5)

Develops a test of visual memory which requires recognition of visual forms rather than reproduction, and compares it with a battery of other instruments. Subjects were 198 kindergarten children and 32 educable retarded children, 13 of whom had central nervous system impairment.

46. CARROLL, JOHN B.; DAVIES, PETER; & RICHMAN, BARRY. *The American Heritage word frequency book.* Boston: Houghton Mifflin Company, 1971.

Examines a computer-assembled sampling of more than five million words drawn in 500-word samples from over 1,000 published materials used in grades three through nine. The corpus contains a total of 86,741 different words with an alphabetical listing, a rank order by frequency listing, and a frequency listing, by grade level and by subject matter.

47. CARTER, HODDING. *Their words were bullets.* Athens, Georgia: University of Georgia Press, 1969. (III-10)

Analyzes the role of the Southern press through four periods: pre-Civil War, Civil War, Reconstruction, and post-1900.

48. CARTWRIGHT, G. PHILLIP & MC INTOSH, DEAN K. Three approaches to grouping procedures for the education of disadvantaged primary school children. *The Journal of Educational Research,* May-June 1972, *65,* 425-429. (V-5)

Investigates the relative effects of three different grouping procedures on the academic achievement of approximately 260 disadvantaged pupils in grades one, two, and three.

49. CEGELKA, PATRICIA A. & CEGELKA, WALTER J. A review of research: reading and the educable mentally handicapped. *Exceptional Children*, November 1970, 37, 197-199. (I)

Reviews the research literature dealing with current approaches to teaching reading to the mentally handicapped and reading characteristics of the EMH child.

50. CHAMPION, SHARON. System-word associations of deprived children. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 292-299. (IV-14)

Investigates the system-word associations of 80 deprived kindergarten children and compares to a previous study on average, middleclass children.

51. CHOMSKY, CAROL. Stages in language development and reading exposure. *Harvard Educational Review*, February 1972, 42, 1-33. (IV-7)

Presents a two-part study of 36 children ages 5-10. Part I studied the knowledge of specific aspects of the syntax of English of these subjects, and Part II surveyed the subjects' reading background to consider the relationship between the amount and complexity of what children read to the rate of linguistic development and other factors.

52. CHOPRA, PRAN. Silent speech and silent reading. *Australian Journal of Education*. October 1971, 15, 329-336. (IV-9)

Replicates the findings of a previous study, using 20 boys ages 13 and 14 to examine the relationship between the level of intelligence of the reader and the amount of silent speech as well as between the occurrence of silent speech and the level of comprehension.

53. CLINE, CAROL S. & CARDINALE, JOHN. Braille reading: a review of research. *Education of the Visually Handicapped*, March 1971, 3, 7-10. (I)

Summarizes nine research articles to provide historical perspective of trends leading up to and culminating in the present challenge to teachers of visually handicapped as to their approaches to Braille reading.

54. COLLINS, WAYNE & BIDLE, RAE. Motor fitness training and reading readiness: a causal relationship. *Illinois School Research*, Fall 1971, 8 (1), 13-15. (V-4)

Assesses the effect of a first-grade motor fitness training program on the reading readiness of 40 first graders.

55. COLVIN, CHARLES R. A study of differing treatments in a college reading program. *Reading World*, March 1972, *11*, 227-231. (V-8)

Compares four methods of improving reading skills, using combinations of films, discussions, lectures, and programed texts, to determine which would produce the greatest improvement in rate, comprehension, and vocabulary in college freshmen.

56. CONRAD, R. The effect of vocalizing on comprehension in the profoundly deaf. *British Journal of Psychology*, May 1971, 62, 147-150. (VI)

Compares the comprehension of 23 deaf and 12 hearing children after reading passages silently and aloud. Deaf children's performance was further analyzed in terms of their having an articulatory or a visual strength in learning.

57. COOPER, CHARLES R. Summary of investigations relating to the English language arts in secondary education: 1971. *English Journal*, May 1972, *61*, 728-739. (I)

Reviews the research related to the teaching of secondary English for the year 1971.

58. COSTELLO, JOAN & ALI, FAIZUNISA. Reliability and validity of Peabody Picture Vocabulary Test scores of disadvantaged preschool children. *Psychological Reports*, June 1971, 28, 755-760. (V-11)

Tests the stability of the *PPVT* raw score with 36 preschool black boys and girls (ages 4.1 and 5.0) and 31 boys and girls from a Head Start program.

59. CRAMER, WARD. My mom can teach reading too! *Elementary School Journal*, November 1971, 72, 72-75. (V-5)

Compares reading achievement for 30 pairs of low readiness grade one children, half of whom were given a traditional reading program and half of whom received supplementary programed tutoring in reading.

60. CRARY, HELEN L. & RIDGWAY, ROBERT W. Relationships between visual form perception abilities and reading achievement in the intermediate grades. *Journal of Experimental Education*, Fall 1971, *40* (1), 17-22. (IV-5)

Administers tests of perceptual speed, visual-motor ability, and visual-motor memory and compares the scores of each to scores on two reading achievement tests. A total of 165 grade four, five, and six pupils were tested.

61. CREWS, RUTHELLEN. A linguistic versus a traditional grammar program—the effects on written sentence structure and comprehension. *Educational Leadership*, November 1971, 5, 145-149. (V-6)

Uses five experimental classes and five control classes to assess the effect of a linguistic grammar approach on writing and silent reading comprehension. A total of 225 fourth-grade pupils were involved.

62. CROXEN, MARY E. & LYTTON, HUGH. Reading disability and difficulties in finger localization and right-left discrimination. *Developmental Psychology*, September 1971, 5, 256-262. (IV-12)

Identifies the connection between poor or retarded readers with finger localization difficulties and right-left discrimination as compared with normal readers. An experimental group of all third year poor readers and a control group of "normal" readers, ages 9.6 and 10.6, were used.

63. DERVIN, BRENDA; BOWES, JOHN; & GREENBERG, BRADLEY S. Annotated bibliography on communication and the poor. In Bradley S. Greenberg & Brenda Dervin (Eds.) *Use of the mass media by the urban poor*. New York: Praeger, 1972. Pp. 127-251. (I)

Presents an annotated bibliography of research on the communication behavior of low income individuals.

64. DERVIN, BRENDA; GREENBERG, BRADLEY, S.; BOWES, JOHN; & CURLEY, MARGARET. Summary of related research findings. In Bradley S. Greenberg & Brenda Dervin (Eds.) *Use of the mass media by the urban poor*. New York: Praeger, 1970. Pp. 89-126. (I)

Synthesizes articles, books, and papers on intra-family communication, extra-family communication, and mass communication behavior of the poor.

65. DESJARDINS, MARY. Reading and viewing: a survey. *School Libraries*, Spring 1972, *21*, 26-30. (IV-16)

Surveys the changes in reading interests, TV viewing habits, and other mass media in students in grades nine through twelve. Questionnaire results from 96 boys and 100 girls were analyzed according to grade and sex.

66. DINNAN, JAMES A.; BICKLEY, A. C.; & COWART, HARRY. An analysis of semantic products of disadvantaged and advantaged second, third, and fourth grade good and poor readers. *Journal of Reading Behavior*, Spring 1970-71, 3 (2), 22-26. (IV-14)

Analyzes the responses of 130 second-, third-, and fourth-grade pupils to an oral language inventory. Pupils were identified as good or poor readers, advantaged or disadvantaged learners.

67. DI SALVI, R. DANIEL. A remedial program for undergraduate evening students. *Adult Education Journal*, Spring 1971, *21*, 186-195. (V-8)

Studies the effect of four treatments of reading and study instruction given 100 undergraduate volunteers on reading speed and comprehension, study orientation, and grade point average.

68. DOMINICK, JOSEPH R. & GREENBERG, BRADLEY S. Mass media functions among low-income adolescents. In Bradley S. Greenberg & Brenda Dervin (Eds.) *Use of the mass media by the urban poor*. New York: Praeger, 1970. Pp. 31-49. (III-1)

Uses a total sample of 306 tenth- and eleventh-grade students in a questionnaire survey of mass media usage. Compares usage by low-income whites and blacks with one another and with middle-income white adolescents.

69. DONOHEW, LEWIS & PALMGREEN, PHILIP. An investigation of 'mechanisms' of information selection. *Journalism Quarterly*, Winter 1971, *48*, 627-639, 666. (III-8)

Uses 48 undergraduate subjects to test the hypothesis that discrepant information produces greater psychological stress than does supportive information. Subjects were selected as being high or low on a dogmatism scale.

70. DOOLING, D. JAMES. Some context effects in the speeded comprehension of sentences. *Journal of Experimental Psychology*, April 1972, *93*, 56-62. (IV-10)

Tests how context influences the speed with which sentences are understood by six male and six female college students.

71. DRAPER, ARTHUR G. & MOELLER, GERALD H. We think with words. *Phi Delta Kappan*, April 1971, 52, 482-484. (V-6)

Presents pretest and post-test vocabulary scores of 24,000 grade four, five, and six children who had received instruction in vocabulary for three days a week for a year over the St. Louis schools' radio station.

72. EAKIN, SUZANNE & DOUGLAS, VIRGINIA I. "Automatization" and oral reading problems in children. *Journal of Learning Disabilities*, January 1971, 4, 26-33. (IV-12)

Explores the relationship of "automatized behaviors" and the oral reading performance of 32 fourth- and fifth-grade boys identified as poor and average readers.

73. EDWARDS, BEVERLY SIGLER. The therapeutic value of reading. *Elementary English*, February 1972, 49, 213-218. (I)

Cites 16 sources, including research, in discussing the value of bibliotherapy.

74. ELLISON, TOM & WILLIAMS, GERALD. Social class and children's reading preferences. *Reading*, June 1971, 5 (2), 3-9. (IV-14)

Assesses attitude toward content and illustrations found in two books each of three reading series using a five-point scale. A total of 56 British nine-to-ten year olds, half working class and half middleclass, were subjects.

75. EMANS, ROBERT & URBAS, RAYMOND. Two reading programs for underachieving high school students. *Ohio Reading Teacher*, Fall 1971, 6 (1), 9-10. (V-10)

Appraises the effectiveness of two reading programs for 40 high school students with problems in reading.

76. ENGEL, BARNEY M. & COOPER, MARTIN. Academic achievement and nongradedness. *Journal of Experimental Education*, Winter 1971, 40 (2), 24-26. (V-6)

Selects two schools, one graded and one nongraded, and studies the reading achievement of 20 pairs of grade six pupils in each with intelligence a matching variable.

77. ENTWISLE, DORIS R. Implications of language socialization for reading models and for learning to read. *Reading Research Quarterly*, Fall 1971, 7, 111-167. (I)

Surveys literature suggesting implications of language socialization differences for reading models and learning to read.

78. FAREED, AHMED A. Interpretive responses in reading history and biology: an exploratory study. *Reading Research Quarterly*, Summer 1971, 6, 493-532. (IV-9)

Explores group and individual interpretive processes of 12 sixth-grade pupils' reading materials in two different subject areas.

79. FARLEY, FRANK H. & TRUOG, ANTHONY L. Individual differences in reading comprehension. *Journal of Reading Behavior*, Winter 1970-71, 3 (1), 29-35. (IV-13)

Tests 78 undergraduate students on a reading test and relates their reading comprehension scores to measures of extraversion-introversion, neuroticism, and achievement motivation.

80. FEINMAN, LINDA. Meet Mr. Zee. *Elementary English*, February 1972, 49, 208-212. (IV-9)

Proposes a hierarchy of comprehension skills, literal and inferential, and tests this by administering a reading comprehension test to 47 grade three and 62 grade two children.

81. FISCHER, HEINZ-DIETRICH. The international situation of magazines. In Heinz-Dietrich Fischer & John Calhoun Merrill (Eds.) *International communication*. New York: Hastings House, 1970. Pp. 302-312. (III-11)

Traces the development of magazines from sixteenth century European sources to the 1960's. Sets up some general classifications for comparisons and notes the international characteristics of some.

82. FISCHER, MAURICE D. & TURNER, ROBERT V. The effects of a perceptual-motor training program upon the academic readiness of culturally disadvantaged kindergarten children. *Journal of Negro Education*, Spring 1972, *41*, 142-150. (V-4)

Investigates intelligence, reading readiness, and perceptual ability test differences for 37 five-year-old children in a full-year Kephart perceptual training program, 20 children in a half-year program, and 20 children in a control group.

83. FLEGEL, RUTH C. & CHAFEE, STEVEN H. Influences of editors, readers, and personal opinions on reporters. *Journalism Quarterly*, Winter 1971, *48*, 645-651. (III-10)

Analyzes returns from 17 reporters on two Madison, Wisconsin, daily newspapers to assess the influence on the reporter of his own opinions, his editor's opinions, and his reader's opinions.

84. FLEMING, JAMES T. Relevance of differential thematic content to children's self-selection of reading matter. *Elementary English*, November 1971, *48*, 833-838. (IV-17)

Evaluates the relationship between the level of choice and the reading achievement level of 60 fifth-grade pupils, with thematic content held constant.

85. FLEMING, JAMES T. Teachers' understanding of phonic generalizations. *The Reading Teacher*, February 1972, *25*, 400-404. (II)

Assesses teachers' understanding of phonic generalizations in a study of 40 graduate students in reading.

86. FOLLMAN, JOHN; LOWE, A. J.; & WILEY, RUSSELL. Correlational and factor analysis of critical reading and thinking test scores —twelfth grade. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 128-136. (IV-9)

Decribes first analysis including factor analysis of critical reading and critical thinking test scores of a group of 57 twelfth-grade students.

87. FOULKE, EMERSON. Non-visual communication: IX. Reading by touch (continued). *Education of the Visually Handicapped*, December 1970, 2, 122-124. (I)

Reviews four studies on the comparison of visual reading as compared with touch reading with regard to the word rate achieved.

88. FOULKE, EMERSON. Non-visual communications: X. Reading by touch (continued). *Education of the Visually Handicapped*, March 1971, 3, 25-28. (I)

Reviews 10 research studies done with Braille readers to alleviate the slow rate of their reading.

89. FOWLER, WILLIAM. A developmental learning strategy for early reading in a laboratory nursery school. *Interchange*, 1971, 2 (2), 106-125. (V-3)

Studies the effectiveness of a developmental learning program for teaching reading in a preschool with 109 middleclass children.

90. FOX, MATTHEW. *Religion USA: religion and culture by way of Time magazine*. Dubuque, Iowa: Listening Press, 1971. (III-2)

Analyzes the role of religion in the U.S. through an intensive study and analysis of *Time* magazine for 1958.

91. FRASE, LAWRENCE T. Effect of incentive variables and type of adjunct question upon text learning. *Journal of Educational Psychology*, October 1971, 62, 371-375. (IV-9)

Explores the effect of incentives (money or knowing others received it) on recall of factual and inferred material using 48 college undergraduates as subjects.

92. FRAUNFELKER, BARBARA S. Phonetic compatibility in paired-associate learning of first- and third-grade children. *Developmental Psychology*, September 1971, 5, 211-215. (IV-7)

Tests phonetic compatability, grade level, and sex effects on paired-associate verbal learning of 80 first- and third-grade children in a 2 x 2 x 2 factorial design.

93. FRERICHS, ALLEN H. Relationship of self-esteem of the disadvantaged to school success. *Journal of Negro Education*, Spring 1971, 40, 117-120. (IV-14)

Examines the relationships between self-esteem, reading scores, and grade point average among 53 black inner-city sixth graders.

94. FRITH, UTA. Why do children reverse letters? *British Journal of Psychology,* November 1971, 62, 459-468. (IV-5)

Reports two studies on causes of letter reversals. The first noted copying errors in 215 children ages 4-9 to determine discriminability; in the second, 10 younger and 10 older children matched symbols to determine response bias.

95. GAMSKY, NEAL R. & LLOYD, FAYE WILLIAMS. A longitudinal study of visual perceptual training and reading achievement. *The Journal of Educational Research,* July-August 1971, 64, 451-454. (V-4)

Reports on the effect of visual perceptual training on the reading achievement of kindergarten pupils in 20 classes.

96. GECAS, VIKTOR. Motives and aggressive acts in popular fiction: sex and class differences. *American Journal of Sociology,* January 1972, 77, 680-696. (III-2)

Codes 311 fiction articles appearing in two men's and in two women's periodicals between 1925-1965 for sex and socio-economic differences in depicting aggression and aggressive behavior. Also analyzes changes in stereotypes of aggression over time.

97. GEESLIN, ROBERT H. Engineering reading: success or failure. *Journal of Reading Behavior,* Spring 1970-71, 3 (2), 54-59. (I)

Critiques the design of an earlier study presenting regularly spelled words to children in a look-say fashion.

98. GEESLIN, ROBERT H. & YORK, PATRICIA W. Literacy skills as a barrier to inservice training. *Journal of Reading Behavior,* Summer 1970-71, 3 (3), 9-12. (II)

Investigates the functional literacy skills of four populations of Southern teachers: a group of elementary school teachers assigned for inservice training, elementary school teachers who volunteered for inservice training, teachers participating in a summer institute, and teachers of disadvantaged pupils.

99. GLAVIN, JOHN P. & ANNESLEY, FREDERICK R. Reading and arithmetic correlates of conduct-problem and withdrawn children. *The Journal of Special Education,* Fall 1971, 5, 213-219. (IV-13)

Explores reading and arithmetic achievement and cognitive abilities of 130 boys identified by their teachers as disruptive or

withdrawn in an effort to see whether disparities between achievement and ability might be among the causes for the maladjustment.

100. GLENDENNING, FRANK. Racial stereotypes in history textbooks. *Race Today*, February 1971, 3 (2), 52-54. (III-2)

Explores the changes in the racial stereotypes in nineteenth century, early twentieth century, and contemporary British history textbooks.

101. GLICK, OREN. Some social-emotional consequences of early inadequate acquisition of reading skills. *Journal of Educational Psychology*, June 1972, 63, 253-257. (IV-13)

Reveals relationships between early failure in reading and changes in self concept, attitude, perceived parent behavior, and peer relationships, using 270 third graders of varying levels of reading achievement.

102. GOOD, THOMAS L. & BROPHY, JERE E. Questioned equality for grade one boys and girls. *The Reading Teacher*, December 1971, 25, 247-252. (IV-2)

Examines differential teacher treatment of 24 boys and 24 girls in four first-grade classrooms.

103. GOODACRE, ELIZABETH J. & CLARK, MARGARET M. Initial approaches to teaching reading in Scottish and English schools. *Reading*, June 1971, 5 (2), 15-21. (II)

Compares responses of Scottish and English teachers of first- and second-year pupils to a questionnaire asking about 1) classroom practice, 2) professional preparation and reading, and 3) teaching problems and inservice requirements in reading.

104. GORMLY, JOHN & NITTOLI, MICHAEL J. Rapid improvement of reading skills in juvenile delinquents. *Journal of Experimental Education*, Winter 1971, 40 (2), 45-48. (V-10)

Measures the improvement of reading skills of 20 juvenile delinquent boys who participated in a short-term reading program.

105. GRABER, DORIS. The press as opinion resource during the 1968 presidential campaign. *Public Opinion Quarterly*, Summer 1971, 35, 168-182. (III-2)

Examines campaign information in 20 newspapers during the last four weeks of the 1968 presidential campaign.

106. GREEN, RICHARD B. & ROHWER, WILLIAM D., JR. SES differences on learning and ability tests in black children. *American Educational Research Journal*, November 1971, 8, 601-609. (IV-14)

Examines the relationships of two levels of intellectual performance and socioeconomic status in a study of 60 black fourth graders.

107. GREENBERG, BRADLEY S. Summary of findings and future research directions. In Bradley S. Greenberg & Brenda Devin (Eds.) *Use of the mass media by the urban poor.* New York: Praeger, 1970. Pp. 73-86. (I)

Summarizes the findings of three studies focusing on mass communication behavior of the urban poor. Suggests four broad areas of needed research.

108. GREENBERG, BRADLEY S. & DERVIN, BRENDA. The role of the mass media for urban poor adults. In Bradley S. Greenberg & Brenda Dervin (Eds.) *Use of the mass media by the urban poor.* New York: Praeger, 1970. Pp. 3-29. (III-1)

Presents and compares information on the mass media usage of flow-income adults (N=281), both black and white, and the general population (N=206). Data were collected by personal interview in the former group and by phone interview in the latter.

109. GREENBERG, BRADLEY S. & DOMINICK, JOSEPH R. Television behavior among disadvantaged children. In Bradley S. Greenberg & Brenda Dervin (Eds.) *Use of the mass media by the urban poor.* New York: Praeger, 1970. Pp. 51-72. (III-1)

Studies television and other mass media behaviors for low, medium, and high income black and white fourth- and fifth-grade pupils. Questionnaire data were obtained from 392 children.

110. GWALTNEY, WAYNE K. An evaluation of a summer reading improvement course for disadvantaged high school students. *Journal of Reading Behavior,* Fall 1970-71, 3 (4), 14-21. (V-7)

Uses a battery of test scores administered to a total of 60 Upward Bound high school students in evaluating the effectiveness of a seven-weeks' reading improvement course.

111. HACHTEN, WILLIAM A. *Muffled drums.* Ames, Iowa: Iowa State University Press, 1971. (III-1)

Surveys the uses and functions of the media in contemporary Africa. Case studies of news media systems in several African states are reported.

112. HAFNER, LAWRENCE E. & WEAVER, WENDELL W. Correlates of error rate in the pronunciation of *WISC* vocabulary items. *Journal of Reading Behavior,* Spring 1970-71, 3 (2), 27-31. (IV-8)

Tests the relationships of physical and semantic characteristics of *WISC* vocabulary words to error rate in pronunciation for 72 fourth graders.

113. HALL, MARYANNE. The language experience approach for the culturally disadvantaged. *Reading information series: where do we go?* Newark, Delaware: International Reading Association, 1971. (I)

Reviews the literature and the research related to the language experience technique with special emphasis on the disadvantaged child.

114. HALLIWELL, JOSEPH W. & SOLAN, HAROLD A. The effects of a supplemental perceptual training program on reading achievement. *Exceptional Children*, April 1972, *38*, 613-621. (IV-5)

Investigates the effectiveness of an extended, comprehensive supplementary perceptual-motor training program on the reading achievement of 140 first-grade boys and girls designated as potential reading problems.

115. HAMBLIN, JUNE A. & HAMBLIN, ROBERT L. On teaching disadvantaged preschoolers to read: a successful experiment. *American Educational Research Journal*, Spring 1972, *9* (2), 209-216. (V-3)

Teaches 32 inner-city preschool children to read under token reinforcement and peer tutoring conditions, and assesses the effects of each condition independently and in combination.

116. HARDT, HANNO. The plight of the daily press in Western Europe. In Heinz-Dietrich Fischer & John Calhoun Merrill (Eds.) *International communication*. New York: Hastings House, 1970. Pp. 288-294. (III-11)

Covers the period from World War II to 1968, presenting circulation and publication data on newspapers in a number of European countries and discusses causal factors contributing to the decline of the number of papers.

117. HARGIS, CHARLES H. A comparison of retarded and nonretarded children on the ability to use context in reading. *American Journal of Mental Deficiency*, May 1972, *76*, 726-728. (VI)

Investigates performances of 15 retarded children (IQ 55-70, CA 10-12) and 15 nonretarded children (IQ 100-155, CA 10-12) on cloze tests composed of materials at their instructional reading levels.

118. HARLESS, JAMES D. The impact of adventure fiction on readers: the tough-guy type. *Journalism Quarterly*, Spring 1972, *49*, 65-73. (III-8)

Examines the effect of reading adventure fiction on 84 freshman English students.

119. HARLEY, RANDALL K. & RAWLS, RACHEL. Comparison of several approaches for teaching Braille reading to blind children. *Education of the Visually Handicapped*, May 1970, 2, 47-51. (VI)

Determines the effectiveness of various approaches to teaching of beginning reading to blind children, using 39 beginning Braille readers with mean IQ 82.667.

120. HARPER, ROSEMARY; CLEARY, A.; & PACKHAM, D. An automated technique for the training of retarded children. *Programmed Learning*, January 1971, *8*, 1-9. (VI)

Tests the success of two automated training systems, for 16 severely subnormal children (CA 9-16, MA 2.9-8.4).

121. HARRIS, MARY B. & REAM, FRED. A program to improve study habits of high-school students. *Psychology in the Schools*, July 1972, *9* (3), 325-330. (V-7)

Develops a study skills improvement program and reports results of its use with high school students taking part in some or all of the 10 lessons.

122. HEITZMAN, ANDREW J. & PUTNAM, MARY J. Token reinforcement and adult basic education. *Journal of Reading*, February 1972, *15*, 330-334. (V-8)

Presents evaluative data on a token reinforcement system used in building reading skills with 17 adults.

123. HICK, THOMAS L. & SANTMAN, MARILYNN C. Test of a strategy to increase the predictability of first-grade reading skills from letter making abilities in kindergarten. *The Journal of Educational Research*, December 1971, *65*, 147-150. (V-11)

Compares two methods of measuring letter-naming skills of 35 kindergarteners to predict first-grade reading achievement test scores.

124. HILL, WALTER. Characteristics of secondary reading: 1940-1970. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 20-29. (I)

Surveys some of the most current developments in secondary reading programs; lists 22 references.

125. HIPPLE, THEODORE W. & GIBLIN, THOMAS *R.* The professional reading of English teachers in Florida. *Research in the Teaching of English*, Fall 1971, *5*, 153-164. (III-4)

Surveys the professional reading habits of Florida English teachers based upon 386 responses received.

126. HIPPLE, THEODORE W.; GIBLIN, THOMAS R.; & MEGENITY, JACK. Have your students read . . . ? *Phi Delta Kappan*, March 1972, *53*, 441-442. (III-4)

Presents data collected from 165 educators who were asked to list four journals and six books that all secondary teachers should read.

127. HOFFMANN, EARL. Pre-kindergarten experiences and their relationships to reading achievement. *Illinois School Research*, Fall 1971, *8* (1), 6-12. (V-4)

Measures readiness factors of 162 children entering kindergarten and relates these to reading achievement near the end of third grade.

128. HOLLANDER, NEIL. Adolescents and the war: the sources of socialization. *Journalism Quarterly*, Fall 1971, *48*, 472-479. (III-1)

Surveys high school seniors to determine what sources youths depend on most for information about the war.

129. HOLLEY, FREDA M. & KING, JANET K. Vocabulary glosses in foreign language reading materials. *Language Learning*, December 1971, *21*, 213-219. (IV-8)

Investigates the effects of three types of glossing on vocabulary and comprehension of a selection in German with two levels of density for 110 college students.

130. HOPKINS, MARK W. *Mass media in the Soviet Union*. New York: Pegasus, 1970. (III-1)

Traces the development of newspapers, magazines, and other mass media of the Soviet Union from 1913 to 1968.

131. HUTCHINSON, JUNE O'SHIELDS. Reading tests and nonstandard language. *The Reading Teacher*, February 1972, 25, 430-437. (IV-14)

Investigates the dialect-prejudiced content of the *Metropolitan Achievement Test* by rescoring the tests of 30 black pupils after removing dialect-prejudiced items.

132. INGERSOLL, GARY M. & DI VESTA, FRANCIS J. Effects of modality preferences on performance on a bisensory missing-units task. *Journal of Experimental Psychology,* May 1972, *93,* 386-391. (IV-3)

Identifies aural and visual modality preferences by determining the differences in recall of stimuli presented through each modality. Subjects, 69 undergraduates, were given a bisensory digit span test to identify aural and visual attenders and were then asked to recall one of five previously presented words.

133. INSELBERG, RACHEL. Current issues and research gaps in initial reading instruction. *Education,* April/May 1972, *92* (4), 80-83. (I)

Reviews 21 studies of initial reading experiences and of beginning reading instruction.

134. JACKSON, ROBERT K. Implications of language research for reading teaching. *Reading Improvement,* April 1972, *9,* 3-9, 27. (I)

Discusses 12 studies researching the language children have and know at various stages of their development and the implications for reading.

135. JANZEN, HENRY L. & JOHNSTON, EDWIN F. The use of reading tests for entrance and placement testing in a community college. *Alberta Journal of Educational Research,* September 1971, *17,* 165-171. (V-11)

Assesses the use of two reading tests to predict the English course grade and first semester grade point average of 189 community college freshmen.

136. JARVELLA, ROBERT J. & SINNOTT, JOAN. Contextual constraints on noun distributions to some English verbs by children and adults. *Journal of Verbal Learning and Verbal Behavior,* February 1972, *11,* 47-53. (IV-7)

Determines to what extent certain representations apparent in the adult lexicon of English are already present in the lexical systems of children (9-12 year olds) using 45 third graders, 45 sixth graders, and 45 college students.

137. JENKINS, JOSEPH R.; BAUSELL, R. BARKER; & JENKINS, LINDA M. Comparisons of letter name and letter sound training as transfer variables. *American Educational Research Journal,* Winter 1972, *9* (1), 75-86. (IV-3)

Does four successive experiments to determine the relative difficulty of learning letter names and sounds and the subse-

quent effects of each on learning new words. Four groups of first-grade subjects were used.

138. JERROLDS, BOB W.; CALLAWAY, BYRON; & GWALTNEY, WAYNE. A comparative study of three tests of intellectual potential, three tests of reading achievement, and the discrepancy scores between potential and achievement. *The Journal of Educational Research*, December 1971, 65, 168-172. (V-11)

Explores the validity of three IQ tests, the inter-relationships among three tests of reading achievement, and the use of discrepancy scores to classify students for remedial reading programs in a study of 50 subjects from grades one to ten.

139. JOHNS, JERRY L. The attitudes of inner-city and suburban students toward teachers' oral reading. *Elementary English*, February 1972, 49, 184-186. (IV-10)

Compares responses of inner-city and suburban fifth- and sixth-grade children to a questionnaire asking if teachers read orally and if children like to be read to. A total of 346 pupils were involved.

140. JOHNS, JERRY L. The Dolch basic word list—then and now. *Journal of Reading Behavior*, Fall 1970-71, 3 (4), 35-40. (V-9)

Checks the vocabulary appearing in five different basal reading series, pre-primer through grade six, to determine the percentage of Dolch words found in each.

141. JOHNS, JERRY L. & READ, DONNA J. The attitudes of inner-city and suburban students toward teachers' oral reading—a second report. *Elementary English*, February 1972, 49, 187-189. (IV-10)

Uses 400 grade five and six pupils in a replication study to determine pupils' attitudes toward teachers' reading to them. Compares responses of inner-city and suburban children.

142. JOHNSON, DAVID C. The effect of reading and punctuation variations upon reading comprehension. In Frank P. Greene (Ed.) Reading: The right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 304-311. (IV-9)

Assesses the effect of variations in reading and punctuation on the reading comprehension of 48 college males.

143. JOHNSON, H.; JONES, D. R.; COLE, A. C.; & WALTERS, M. B. The use of diacritical marks in teaching beginners to read. *The British Journal of Educational Psychology*, June 1972, 42, 120-126. (V-5)

Compares reading and spelling achievement of 258 children from three schools, 142 of whom used the Diacritical Marking Medium and 116 of whom used T.O.

144. JOHNSON, ROGER; FOLLMAN, JOHN; WILEY, RUSSELL; LOWE, A. J.; & MILLER, WILLIAM. Canonical and partial correlation of critical reading and critical thinking test scores—twelfth grade. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 137-141. (IV-9)

Presents second analysis based on partial correlation of critical reading and critical thinking skills of a group of 57 twelfth-grade students.

145. JONES, JAMES P. Negro stereotypes in children's literature: the case of Nancy Drew. *Journal of Negro Education*, Spring 1971, *40*, 121-125. (III-2)

Summarizes the attributes of the Negro characters appearing in the first 17 volumes of the Nancy Drew mystery series.

146. JONGSMA, EUGENE. The cloze procedure as a teaching technique. *Reading information series: where do we go?* Newark, Delaware: International Reading Association, 1971. (I)

Includes a critical review of the literature in assessing what is known of the cloze technique as an instructional tool.

147. JONGSMA, EUGENE A. The difficulty of children's books: librarians' judgments versus formula estimates. *Elementary English*, January 1972, *49*, 20-26. (IV-17)

Asks a random sample of school and public librarians to estimate readability level of 12 recent children's books and compares their responses to the estimates found from using five readability formulas.

148. KAUFMAN, ALAN S. & KAUFMAN, NADEEN L. Tests built from Piaget's and Gesell's tasks as predictors of first grade achievement. *Child Development*, June 1972, *43*, 521-535. (V-11)

Ascertains the ability of Piagetan tasks to predict scholastic achievement by administering those and other readiness tasks to 80 kindergarteners and by comparing the results with the scores of reading, spelling, and arithmetic achievement tests given in first grade.

149. KERNER, MARION & ACHENBACH, THOMAS. The Children's Associative Responding Test: its relation to individual tests of recall, comprehension, and concept formation. *Psychological Reports*, August 1971, *29*, 119-125. (IV-9)

Uses an analogy test to identify 20 nonassociative responders and 20 associative responders from a sample of 139 fifth graders, and measures the difference in paragraph comprehension for these two groups.

150. KERSEY, HARRY & FADJO, REBECCA. A comparison of Seminole reading vocabulary and the Dolch word lists. *Journal of American Indian Education*. October 1971, *11*, 16-18. (IV-14)

Compares the reading vocabulary of 11 third- and fourth-grade disadvantaged Indian children with the Dolch word list to discover specific parameters of achievement of these Indian children.

151. KEY, MARY RITCHIE. The role of male and female in children's books—dispelling all doubt. *Wilson Library Bulletin*, October 1971, *46*, 167-176. (III-2)

Studies previous reports on sex roles in children's books and analyzes several textbooks to see if findings hold true.

152. KIMBLE, RAYMOND L. & DAVISON, RONALD G. Reading improvement for disadvantaged American Indian youth. *Journal of Reading*, February 1972, *15*, 342-346. (V-10)

Describes an incentive-based corrective reading program used with high school age Indian students. Evaluation results are reported.

153. KING, ETHEL M. & MUEHL, SIEGMAR. Effects of visual discrimination training on immediate and delayed word recognition in kindergarten children. *Alberta Journal of Educational Research*, June 1971, *17*, 77-87. (IV-5)

Presents evidence on the relative effectiveness of five different kinds of visual discrimination training on the ability of 160 kindergarteners to recall words similar or dissimilar in configuration and sound.

154. KINTSCH, W. & MONK, D. Storage of complex information in memory: some implications of the speed with which inferences can be made. *Journal of Experimental Psychology*, June 1972, *94*, 25-32, (IV-9)

Observes time needed by college students to make inferences when paragraphs read were varied from simple statements of syntactically and semantically transformed statements in an effort to arrive at conclusions about the way information is stored in memory.

155. KIRSNER, KIM. Developmental changes in short-term recognition memory, *British Journal of Psychology*, February 1972, 63, 109-117. (IV-3)

Uses naming and recognition latencies to discover whether differences exist between auditory and visual presentation and retrieval of items in short-term memory. Sixteen subjects from each age range (9-10, 13-14, 18-32, 51-69) participated.

156. KLAUSMEIER, HERBERT J.; SORENSON, JUANITA S.; & QUILLING, MARY R. Instructional programming for the individual pupil in the multiunit elementary school. *Elementary School Journal*, November 1971, 72, 88-101. (V-5)

Presents and compares mean scores on a word recognition and on a skills test of pupils in two schools before and after the *Wisconsin Design for Reading Skill Development* was implemented.

157. KLING, MARTIN. Summer Head Start for disadvantaged college freshmen. *Journal of Reading*, April 1972, *15*, 507-512. (V-8)

Presents data on the results of a two-week summer reading and study program developed for 22 female and 39 male socially disadvantaged students entering college.

158. KRETSCHMER, JOSEPH C. Subject matter as a factor in testing comprehension. *Reading World*, May 1972, *11*, 275-285. (III-2)

Analyzes the content of 16 standardized reading tests to determine what topics are included in test content and in what proportions various topics are used.

159. LABOV, WILLIAM. The reading of the *-ed* suffix. In Harry Levin & Joanna P. Williams (Eds.) *Basic Studies on Reading*. New York: Basic Books, 1970. Pp. 222-245. (IV-14)

Analyzes the oral reading of nine sentences by 46 nonstandard English speaking black males, ages 10 to 17. The reading of the *-ed* suffix in particular was studied, and linguistic characteristics of its structure examined .

160. LA BRIE, HENRY G., III & ZIMA, WILLIAM J. Directional quandaries of the black press in the United States. *Journalism Quarterly*, Winter 1971, *48*, 640-644, 651. (III-5)

Tabulates data collected by mail or telephone survey on the readership of the black press and on its current and future role. A total of 90 editors and publishers of black papers participated.

161. LANE, PATRICK; POLLACK, CECILIA; & SHER, NORMAN. Remotivation of disruptive adolescents. *Journal of Reading*, February 1972, *15*, 351-354. (V-10)

Gives information on the results of an evaluation study using eight disruptive junior high students to teach poor reading third- and fourth-grade boys.

162. LARSON, CARL M. The struggle of Paddock Publications versus Field Enterprises, Inc. *Journalism Quarterly*, Winter 1971, 48, 700-706, 713. (III-10)

Documents the battle between two newspaper chains in their attempts to appeal to suburban Chicago readers and explains the Paddock victory.

163. LEEDS, DONALD S. The role of self-concept in the psychological and educational development of the individual. *Reading World*, December 1971, *11*, 161-176. (I)

Examines 47 references dealing with self concept in an effort to define the construct and to determine how it affects educational development.

164. LEVITT, EDITH. The effect of context on the reading of mentally retarded and normal children at the first-grade level. *The Journal of Special Education*, Fall-Winter 1970, 4, 425-429. (VI)

Analyzes the effect of context on the word recognition ability of 26 mentally retarded and 24 normal children with equivalent mean reading levels.

165. LEVITT, EDITH. Higher-order and lower-order reading responses of mentally retarded and nonretarded children at the first-grade level. *American Journal of Mental Deficiency*, 1972, 77 (1), 13-20. (VI)

Contrasts the reading responses and errors of 26 retarded and 24 normal first-graders of varied ethnic backgrounds, using a set of 13 response categories, including 10 error categories, in order to determine what similarities or differences might exist.

166. LIPETZ, BEN-AMI. Catalog use in a large research library. *Library Quarterly*, January 1972, 42, 129-139. (III-7)

Studies the utilization of the main catalog of Yale University Library. Over 2,100 users were interviewed in a three-year period based on observed traffic volume by hour of day, day of week, and time of year.

167. LOCKE, JOHN L. & FEHR, FRED S. Subvocalization of heard or seen words prior to spoken or written recall. *American Journal of Psychology*, March 1972, 85, 63-68. (IV-3)

Identifies the more likely reasons for phonetic coding activity as measured by EMG recordings with 24 adults, between ages of 15 and 51, as subjects.

168. LOEWENTHAL, KATE. A study of imperfectly acquired vocabulary. *British Journal of Psychology*, May 1971, 62, 225-233. (IV-8)

Performs three experiments investigating differences among 68 undergraduates when known or unfamiliar words are the stimuli in tachistoscopic recognition, word association, and word selection tasks.

169. LOWE, A. J.; FOLLMAN, JOHN; BURLEY, WADE; & FOLLMAN, JOHNNY. Psychometric analysis of critical reading and critical thinking test scores—twelfth grade. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 142-147. (IV-9)

Presents final analysis of critical reading and critical thinking skills of a group of 57 twelfth-grade students.

170. MAC GINITIE, WALTER H. & TRETIAK, RICHARD. Sentence depth measures as predictors of reading difficulty. *Reading Research Quarterly*, Spring 1971, 6, 364-377. (IV-17)

Evaluates two measure of sentence complexity and one readability formula as predictors of reading difficulty using 80 graded passages.

171. MADDEN, THOMAS JAMES. Editor authoritarianism and its effect on news display. *Journalism Quarterly*, Winter 1971, 48, 660-666. (III-10)

Identifies high and low authoritarian editors in a group of 28 from one Philadelphia newspaper and notes their assessments of the news value of protest demonstrations.

172. MARSHMENT, MARGARET. The black man in fiction. *Race Today*, June 1971, 3, 206. (III-2)

Discusses the image of the black in four novels, noting old stereotypes in recent literature.

173. MASLOG, CRISPIN. Images and the mass media. *Journalism Quarterly*, Fall 1971, 48, 519-525. (III-1)

Investigates the attitudes of 99 Filipino and Indian students in the U.S. toward the mass media, comparing their dependence on foreign media with their homeland media.

174. MASON, GEORGE E. A second report on word confusion: sequence and duration of instruction in the mislearning of words. *Journal of Reading Behavior*, Fall 1970-71, 3 (4), 41-46. (IV-4)

Varies amount of instructional time and order of presentation of isolated word list pairs that differ in letter content, letter ordering, or both so as to determine the effect of sequence of introduction on learning words. Subjects were 48 pupils covering primary grades through high school levels.

175. MASON, GEORGE E. & BLANTON, WILLIAM E. Story content for beginning reading instruction. *Elementary English*, November 1971, 48, 793-796. (IV-16)

Identifies the reading interests of 180 preschool children.

176. MC CLELLAN, DORINDA ANN. Reading ability of junior college students and readability of assigned texts. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 348-354. (V-9)

Assesses, by means of the Dale-Chall formula, the readability level of selected texts used at a junior college; and compares these with reading scores of the entering freshmen.

177. MC DIARMID, GARNET & PRATT, DAVID. *Teaching prejudice: a content analysis of social studies textbooks authorized for use in Ontario*. Toronto: The Ontario Institute for Studies in Education, 1971. (III-2)

Analyzes 125 English- and French-language social studies textbooks used in Ontario schools for examples of evaluative assertions about six minority groups. The textbooks covered grade levels one through thirteen.

178. MC INTYRE, CURTIS W.; ODOM, RICHARD D.; & BYASSEE, MARY. The influence of congenital deafness on processes concerned with reading: an initial investigation. *Journal of Reading Behavior*, Winter 1970-71, 3 (1), 36-41. (VI)

Assigns 18 congenitally deaf grade one children to one of three transfer conditions following a training task in an attempt to determine the process by which they learn to read.

179. MC NINCH, GEORGE. Auditory perceptual factors and measured first-grade reading achievement. *Reading Research Quarterly*, Summer 1971, 6, 472-492. (IV-6)

Explores the predictive relationships between tests measuring a proposed auditory perceptual skill model and the reading achievement of 285 first-grade pupils.

180. MC NINCH, GEORGE. Determining the reading preferences of third, fourth, and fifth grade disadvantaged pupils. *Journal of Reading Behavior*, Spring 1970-71, 3 (2), 32-38. (IV-14)

Investigates reading preferences of 59 third-, fourth-, and fifth-grade disadvantaged pupils.

181. MICKELSON, NORMA I. Meaningfulness indices for 120 mass and count nouns for children aged 14 years and for university students. *The Journal of Educational Research,* September 1971, 65, 27-30. (IV-8)

Compares meaningfulness indices for 120 mass and count nouns for 1,199 junior high students and 289 university students.

182. MILLIGAN, JERRY L. & POTTER, ROBERT E. The Peabody Language Development Kit and its function in a language development and pre-reading program: a review. *Reading World,* December 1971, *11,* 130-136. (I)

Cites nine studies in a review of the efficiency of the *Peabody Language Development Kit* with particular attention to the effects of the program on success in reading and language development.

183. MOORE, W. E. *The effects of S.R.A. laboratory usage with fifth grade children.* (Technical Report Research Bulletin No. 29) Department of Education, New South Wales, 1968. (V-6)

Compares reading progress over a 12-week period of one group of 404 children using the SRA Reading Laboratory and a control group of 374 pupils following a standard reading program.

184. MORRISON, COLEMAN; HARRIS, ALBERT J.; & AUERBACH, IRMA T. The reading performance of disadvantaged early and non-early readers from grades one through three. *The Journal of Educational Research,* September 1971, 65, 23-26. (V-5)

Compares the reading performance from grade one to grade three of black, disadvantaged pupils who were classified as early or non-early readers entering first grade.

185. MORRISROE, MICHAEL & MORRISROE, SUE. TESL: a critical evaluation of publications, 1961-68. *Elementary English,* January 1972, 49, 50-61. (I)

Surveys 20 journals for research articles between 1962-1968 dealing with teaching English as a second language. Critically reviews the research found including reading and oral language studies.

186. MOWLANA, HAMID. Cross-national comparison of economic journalism. In Heinz-Dietrich Fischer & John Calhoun Merrill (Eds.) *International communication.* New York: Hastings House, 1970. Pp. 295-301. (III-11)

Explores the relationship between the political and economic development and the growth of economic journalism (news coverage of economics) in seven Asian countries, noting reasons for both the growth of and failure in this coverage.

187. MUISE, J. GERARD; LE BLANC, RENAUD S.; & JEFFREY, CLARENCE J. Letter reading by English SS as a function of order of approximation to French and English. *Psychological Reports*, April 1972, 30, 395-398. (IV-11)

Presents 14 college students who were beginning instruction in French with strings of 240 letters representing five levels of approximation to English and French in order to determine the effects of approximation and of previous language habits on speed of letter reading.

188. MUSGROVE, WALTER J. A follow-up study of black and white kindergarten children on academic achievement and social adjustment. *Academic Therapy*, Winter 1971-72, 7, 123-129. (IV-14)

Reports followup data at second grade on 106 economically deprived kindergarten children. Compares performance of races on various academic measures.

189. MUSTICO, THOMAS W. Some implications from paired associate learning on the development of reading readiness. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 283-291. (IV-4)

Explores relationship between learning in paired-associate task and measured intelligence of 292 college students, and twelfth-, ninth-, sixth-, and third-graders.

190. NAM, SUNWOO. Editorials as an indicator of press freedom in three Asian countries. *Journalism Quarterly*, Winter 1971, 48, 730-740. (III-2)

Selects and analyzes editorials appearing in 1965 and 1967 in one pro- and one anti-government newspaper in the Philippines, in Korea, and in Taiwan.

191. NATIONAL EDUCATION ASSOCIATION. The world problem of illiteracy. *NEA Research Bulletin*, May 1972, 50, 53-58. (III-12)

Presents census data on world literacy, pointing out particularly high percentages of illiteracy in developing countries, in women, in countries other than the U.S., and in blacks.

192. NILSSON, NILS GUNNER. The origin of the interview. *Journalism Quarterly*, Winter 1971, *48*, 707-713. (III-10)

Documents material relative to the origin and appearance of the newspaper interview, emphasizing its origin in police court news and reports of sensational trials.

193. NODINE, CALVIN F. & LANG, NORMA J. Development of visual scanning strategies for differentiating words. *Developmental Psychology*, September 1971, 5, 221-232. (IV-5)

Compares the eye movement practices of 26 non-readers (kindergarten) with 23 readers (third grade) in unmatched pairs of four-letter pseudowords and how these practices change with age.

194. NOLAND, EUNICE C. & SCHULDT, W. JOHN. Sustained attention and reading retardation. *Journal of Experimental Education*, Winter 1971, *40* (2), 73-76. (IV-12)

Compares the ability of 20 fourth-grade retarded readers to sustain visual attention with that of 20 normal readers.

195. OAKAN, ROBERT; WIENER, MORTON; & CROMER, WARD. Identification, organization, and reading comprehension for good and poor readers. *Journal of Educational Psychology*, February 1971, *62*, 71-78. (IV-9)

Assesses the relationship of identification and organization to comprehension for both good and poor readers with 44 boys and 42 girls in the fifth grade (half poor readers and half good readers). The subjects ranged in age from 9.10 to 11.3 years.

196. O'KEEFE, M. TIMOTHY & KISSEL, BERNARD C. Visual impact: an added dimension in the study of news diffusion. *Journalism Quarterly*, Summer 1971, *48*, 298-303. (III-1)

Tests a diffusion categorization schema through a telephone survey of 508 individuals following the death of Eisenhower.

197. OLSEN, ROGER & AMBLE, BRUCE. The modification of perceptual span: an experimental study. *Journal of Reading Behavior*, Winter 1970-71, 3 (1), 42-50. (IV-5)

Studies the effect on perceptual span development and reading achievement of five different conditions: film, contingency, attention, contingency plus attention, and control. A total of 232 grade four pupils were involved.

198. ORWANT, JACK E. Effects of derogatory attacks in Soviet arms control propaganda. *Journalism Quarterly*, Spring 1972, *49*, 107-115. (III-8)

Explores the effectiveness of propaganda containing derogatory attacks against U.S. institutions and leaders.

199. OTTO, WAYNE; BARRETT, THOMAS C.; SMITH, RICHARD J.; DULIN, KENNETH L.; & JOHNSON, DALE D. Summary and review of investigations relating to reading, July 1, 1970 to June 30, 1971. *The Journal of Educational Research,* February 1972, 65, 242-272. (I)

Summarizes 223 research reports in reading under four major headings.

200. OTTO, WAYNE; CARMAN, MARY JANE; & JENSEN, DELORES. Factors related to poor readers' achievement test performance. *Journal of Reading Behavior,* Fall 1970-71, 3, (4), 1-5. (IV-12)

Studies the influence of time limits, sex, IQ, and reading demands on achievement test performance of 90 disadvantaged, reading disabled sixth-grade pupils.

201. OTTO, WAYNE & PIZILLO, CAROLE. Effect of intralist similarity on kindergarten pupils' rate of word acquisition and transfer. *Journal of Reading Behavior,* Winter 1970-71, 3, (1), 14-19. (IV-4)

Seeks to determine the extent to which intralist similarity affects 54 kindergarten pupils' rate of acquisition of word recognition skills and their ability to generalize skills.

202. PALMATIER, ROBERT A. & MC NINCH, GEORGE. Source of gains in listening skill: experimental or pretest experience? *Journal of Communication,* March 1972, 22, 70-76. (IV-7)

Studies the incidental learning effects upon listening ability of 135 eleventh-grade students in four treatment groups who participated in a program of testing and training in note-taking skills.

203. PARRY, GARETH & UNWIN, DERICK. A selective review of research and development in the new media, with special reference to the disadvantaged child. *Childhood Education,* October 1971, 45, 43-44, 46, 48, 50. (I)

Reviews the research on five teaching machines and discusses their applicability for use with the disadvantaged child.

204. PICK, ANNE D. Some basic perceptual processes in reading. *Young Children,* January 1970, 25, 162-181. (I)

Evaluates 58 available research studies in terms of their success in identifying the basic perceptual processes in reading and specifies some of the reasons for the success or failure of the studies in attaining this goal.

205. PIETILA, ANTERO. Swedish editors' views on government support of the press. *Journalism Quarterly*, Winter 1971, *48*, 724-729. (III-11)

Examines the attitudes of 22 Swedish newspaper editors toward several aspects of government support of the press. Information was collected by means of a mailed questionnaire.

206. PIKULSKI, JOHN J. Candy, word recognition and the "disadvantaged." *The Reading Teacher*, December 1971, 25, 243-246. (IV-14)

Applies three types of reinforcement to word recognition performance of 60 disadvantaged first graders.

207. POWELL, WILLIAM R. & DUNKELD, COLIN G. Validity of the IRI reading levels. *Elementary English*, October 1971, *48*, 637-642. (V-11)

Tests the validity of IRI reading levels by comparing word recognition error ratios on five oral reading instruments by eight sets of criteria.

208. PRYZWANSKY, WALTER B. Effects of perceptual-motor training and manuscript writing on reading readiness skills in kindergarten. *Journal of Educational Psychology*, April 1972, *63*, 110-115. (V-4)

Investigates the effects of three training programs emphasizing fine motor skill development and handwriting instruction on skills of reading readiness and word discrimination. Uses kindergarten children in six schools for control and experimental groups.

209. QUILLING, MARY & OTTO, WAYNE. Evaluation of an objective based curriculum in reading. *The Journal of Educational Research*, September 1971, *65*, 15-18. (V-9)

Evaluates the impact on the reading behavior of second, third, and fourth graders of the word attack element of an objective-based curriculum in reading.

210. RANKIN, EARL F. Grade level interpretation on cloze readability scores. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 30-37. (IV-17)

Presents data from two studies using 133 fourth through eighth graders, whole class, and 18 in a small group to determine grade level readability using a cloze procedure.

211. RANKIN, EARL F. How flexibly do we read? *Journal of Reading Behavior*, Summer 1970-71, 3 (3), 34-38. (V-8)

Investigates the extent of internal reading flexibility in 255 college freshmen by computing a coefficient of correlation between rate and readability on successive 100-word segments in an article read by each subject.

212. RASKIN, LARRY M.; OFFENBACH, STUART I.; & SCOONOVER, DELMER L. A developmental study of PPVT temporal stability over two 6-mo. intervals. *Psychological Reports*, April 1971, 28, 501-502. (V-11)

Measures the effect that age and time span have on the stability of various measures obtained on the *PPVT* with two groups each of 17 kindergarten and 22 third-grade children.

213 RATHS, JA[illegible] D. Report of a survey of readers of *Educational Leadership*. *Educational Leadership*, October 1971, 29, 35-40. (III-5)

Reports the results of a survey to determine the reading habits of 498 subscribers concerning the various sections of the magazine.

214. RENTEL, VICTOR M. & KENNEDY, JOHN J. Effects of pattern drill on the phonology, syntax, and reading achievement of rural Appalachian children. *American Educational Research Journal*, Winter 1972, 9 (1), 87-100. (V-5)

Assesses the effectiveness of oral pattern practice for developing standard language patterns in non-standard speakers and for enhancing the reading ability of 120 first graders in six rural Appalachian schools.

215. REX, EVELYN J. A study of basal readers and experimental supplementary instructional materials for teaching primary reading in Braille. Part I: An analysis of Braille features in basal readers. *Education of the Visually Handicapped*, December 1970, 2, 97-107. (VI)

Studies the use of contractions in vocabulary in four Braille basal readers, preprimer through third grade.

216. REX, EVELYN J. A study of basal readers and experimental supplementary instructional materials for teaching primary reading in Braille. Part II: Instructional materials for teaching reading in Braille. *Education of the Visually Handicapped*, March 1971, 3, 1-7. (VI)

Studied 27 blind children reading at second- or third-grade level for eight weeks to test the effectiveness of supplementary instructional materials.

217. REYNOLDS, RICHARD J. Effects of modality on response in word association tasks. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 300-303. (IV-3)

Describes four experiments involving 194 subjects of divergent backgrounds to determine if the mode of presentation of a stimulus word will affect the response in a word association task.

218. RIDER, GERALD S. Title I and remedial reading components for disadvantaged students. *California Journal of Educational Research*, January 1972, *23*, 25-44. (V-1)

Identifies and analyzes the elements of the instructional and organizational systems used in the most effective Title I reading components for disadvantaged students in grades one through six. The sample used in the study represented 998 students in nine Title I projects in grades one through six.

219. ROBINSON, RICHARD D. An introduction to the cloze procedure. *Annotated bibliography series*, Newark, Delaware: International Reading Association, 1971. (I)

Gives an annotated bibliography including research on various aspects of the cloze procedure.

220. RODENBORN, LEO V., JR. The importance of memory and integration factors to oral reading ability. *Journal of Reading Behavior*, Winter 1970-71, *3* (1), 51-59. (IV-10)

Constructs and administers measures of auditory memory, visual memory, and auditory-visual integration to 180 pupils in grades one to six in order to determine their predictive validity for oral reading achievement.

221. ROSE, CYNTHIA; ZIMET, SARA G.; & BLOM, GASTON E. Content counts: children have preferences in reading textbook stories. *Elementary English*, January 1972, *49*, 14-19. (IV-16)

Presents 76 grade one pupils with pairs of stories held constant on several variables to determine preferred content.

222. ROTHKOPF, ERNST Z. Incidental memory for location of information in text. *Journal of Verbal Learning and Verbal Behavior*, December 1971, *10*, 608-613. (IV-4)

Measures, using two 3,000-word passages with 53 college students, readers' incidental memory of the location of content in text.

223. ROWELL, C. GLENNON. An attitude scale for reading. *The Reading Teacher*, February 1972, 25, 442-447. (V-11)

Discusses the development of an instrument for measuring attitude toward reading, giving reliability and validity data.

224. ROZIN, PAUL; PORITSKY, SUSAN; & SOTSKY, RAINA. American children with reading problems can easily learn to read English represented by Chinese characters. *Science*, March 1971, *171*, 1264-1267. (V-10)

Studies whether children with reading disability can learn to read English material through a different representational form. Eight second-grade inner-city school children were subjects for the experiment.

225. RUBIN, ROSALYN. Sex differences in effects of kindergarten attendance on development of school readiness and language skills. *Elementary School Journal*, February 1972, 72, 265-274. (IV-2)

Evaluates the effect of kindergarten programs on the language and readiness skills of 93 boys and 89 girls of the same chronological age, 76 of whom attended kindergarten while 106 did not.

226. RUSSELL, GORDON W. & SEWALL, ELIZABETH C. Serial-position effect and organization of recall of connected meaningful verbal material. *Psychological Reports*, April 1972, 30, 443-446. (IV-4)

Tests the generality of the serial position effect on quantitative and organizational recall factors of connected discourse by asking 96 college students to read a passage in which serial position of sentences was varied and then to recall what they had read as exactly as possible.

227. RUSSELL, JENNIFER. Reading surveys. *Reading*, December 1970, 4 (3), 13-18. (V-2)

Summarizes findings of a literary survey using 32,000 London eight year olds.

228. RYANT, CARL G. From isolation to intervention: *The Saturday Evening Post*, 1939-42. *Journalism Quarterly*, Winter 1971, 48, 679-687. (III-10)

Traces the change from an isolationist editorial policy to one in support of America's role in the war by *The Saturday Evening Post* from 1939 through early 1942.

229. RYSTROM, RICHARD. Toward defining comprehension: a third report. *Journal of Reading Behavior*, Winter 1970-71, 3 (1), 20-28. (IV-9)

Designs reading instructional exercises to aid comprehension in social studies and assesses their effectiveness. A total of 92 grade four pupils were involved.

230. RYSTROM, RICHARD & COWART, HARRY. Black reading "errors" or white teacher biases? *Journal of Reading*, January 1972, *15*, 273-276. (V-11)

Analyzes the effect of the race of a tester upon results obtained on a word recognition test. A total of 30 black and 29 white second graders were used as subjects.

231. SABATINO, DAVID A.; SPIDAL, DAVID; & OHRTMAN, WILLIAM. Evaluation of a visual-perceptual training program of word and form constancy. *Psychology in the Schools*, October 1971, *8*, 390-398. (V-10)

Studies the effects of a visual-perceptual form-constancy training program on the reading performance of 22 children attending a learning disability program and compares their performance with that of a control group of 22.

232. ST. JOHN, NANCY. Thirty-six teachers: their characteristics and outcomes for black and white pupils. *American Educational Research Journal*, November 1971, *8*, 635-648. (II)

Relates quality of teaching to quality of learning in a study of 956 sixth-grade children in 18 schools.

233. SAMUELS, S. JAY. The effect of letter-name knowledge on learning to read. *American Educational Research Journal*, Winter 1972, *9* (1), 65-74. (IV-4)

Attempts to determine what component of letter-name training facilitates reading acquisition in one study of 100 first graders midway through the first year, and a second with 75 others.

234. SAMUELS, S. JAY & CHEN, C. C. Comparison of word recognition strategies of adults and children. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of The National Reading Conference*, 1971. Pp. 73-77. (IV-11)

Explores word recognition strategies of 25 college students as compared to those of 25 fourth graders.

235. SAPIR, SELMA G. Auditory discrimination with words and nonsense syllables. *Academic Therapy*, Spring 1972, 7, 307-313. (IV-6)

Explores the use of verbal cues in the auditory discrimination task presented to 150 kindergarten children.

236. SASSENRATH, JULIUS M. Effects of delay of feedback and length of post-feedback interval on retention of prose material. *Psychology in the Schools*, April 1972, *9*, 194-197. (IV-11)

Examines the effects of varying degrees of delayed feedback on the retention of regular classroom prose materials using 390 sixth graders who read a 1,000-word essay, were tested on it immediately, and were given feedback and delayed retention tests over a seven-day period.

237. SCHULTZ, CHARLES B. & DI VESTA, FRANCIS J. Effects of passage organization and note taking on the selection of clustering strategies and on recall of textual materials. *Journal of Educational Psychology*, June 1972, 63, 244-252. (IV-4)

Investigates the conditions under which a subject's clustering, by name or attribute, deviates from that of the passage organization and the effects on recall, using 48 high school students.

238. SCHWARZ, ROBERT H. & COOK, JOHN J. Teacher expectancy as it relates to the academic achievement of EMR students. *The Journal of Educational Research*, May-June, 1972, 65, 393-396. (V-10)

Analyzes information on the effect of teacher expectancy as it related to the academic performance of 136 educable mentally retarded pupils aged 6.0 to 12.8.

239. SEGAL, MARILYN. An experimental study in perceptual modality training. *Journal of Reading Behavior*, Fall 1970-71, 3 (4), 22-34. (IV-3)

Investigates the effects of four different perceptual skill training programs on the scores achieved on a battery of tests by 60 low socio-economic kindergarten children.

240. SEHULSTER, JEROME R. & CROUSE, JAMES H. Storage and retrieval of prose material. *Psychological Reports*, April 1972, 30, 435-439. (IV-9)

Compares comprehension of prose material read by 72 undergraduates, half of whom were asked to answer specific questions about the content while the other half were allowed free recall.

241. SHAPIRO, BERNARD J.; WILLFORD, ROBERT E.; & SHAPIRO, PHYLLIS P. The i.t.a. transition problem—a comparative study. *The Journal of Educational Research*, October 1971, 65, 57-60. (V-5)

Compares the effectiveness of three instructional strategies used in the transition from i.t.a. to T.O. by the children in 12 second-grade classes.

242. SHAPIRO, LEWIS; ANASTASIOW, NICHOLAS; & HOBAN, DENNIS. The mature reader as an "educated guesser." *Elementary English*, March 1972, *49*, 418-421. (IV-10)

Studies 23 fourth-grade students to explore the hypothesis that a mature reader selects semantic and syntactic cues to derive meaning from printed material.

243. SHAVER, JAMES P. & NUHN, DEE. The effectiveness of tutoring underachievers in reading and writing. *The Journal of Educational Research*, November 1971, *65*, 107-112. (V-10)

Reports results of a tutoring project using fourth-, seventh-, and tenth-grade underachievers as subjects. End-of-year data as well as data collected two years after subjects had been enrolled in the program, are reported.

244. SHEPPS, FLORENCE P. & SHEPPS, R. RONALD. Relationship of study habits and school attitudes to achievement in mathematics and reading. *The Journal of Educational Research*, October 1971, *65*, 71-73. (IV-13)

Examines the relationship between the study habits and attitudes of 26 sixth graders and their achievement in math and reading.

245. SHIACH, GORDON MC G. The effectiveness of SRA Reading Laboratory 2a with boys of below average ability. *Educational Research*, June 1971, *13*, 222-225. (V-6)

Reports the reading gains of two classes of 12-year-old Scottish boys, one class using SRA reading materials.

246. SILBERBERG, NORMAN E. & SILBERBERG, MARGARET C. Hyperlexia: the other end of the continuum. *The Journal of Special Education*, Fall 1971, *5*, 233-242. (I)

Contends that the ability to name words without comprehending them should be referred to as "hyperlexia," presents evaluative data describing 28 hyperlexic children, and offers a definition of hyperlexia for operational purposes.

247. SIMMONS, JOHN S. & COX, JUANITA. New grammar texts for secondary schools: how do they read? *Journal of Reading*, January 1972, *15*, 280-285. (IV-17)

Compares the readability level of three modern language texts with the reading ability levels of second-, fourth-, eighth-, ninth-, and twelfth-graders.

248. SIMON, RITA JAMES & EIMERMANN, THOMAS. The jury finds not guilty: another look at media influence on the jury. *Journalism Quarterly*, Summer 1971, *48*, 343-344. (III-8)

Surveys 130 randomly selected voters by telephone to determine the influence of newspaper coverage of an alleged murder on potential jurors.

249. SIMONS, HERBERT D. Reading comprehension: the need for a new perspective. *Reading Research Quarterly*, Spring 1971, 6, 338-363. (I)

Identifies seven major approaches to research in reading comprehension, and reviews and critiques studies under each category.

250. SINGH, JANE M. Research in homework as the motivating factor in reading achievement. *Journal of Reading Behavior*, Summer 1970-71, 3 (3), 51-60. (V-6)

Investigates the effect of individualizing homework assignments on the reading achievement of fourth-, fifth-, and sixth-grade children. Approximately 400 pupils were involved.

251. SINKS, THOMAS A. & THURSTON, JAY F. Effect of typing on school achievement in elementary grades. *Educational Leadership*, January 1972, 29, 344-348. (V-6)

Compares the achievement gain in various academic areas of 18 third- and fourth-grade pupils using a typewriter with 18 third- and fourth-grade pupils not using a typewriter.

252. SMITH, FRANK. The readability of sixth grade word problems. *School Science and Mathematics*, June 1971, 71, 559-562. (V-9)

Compares the readability levels of word problems in the sixth grade texts of six arithmetic series and of the written problem sections of three achievement tests.

253. SMITH, JOHN M. & MC COMBS, MAXWELL E. Research in brief: the graphics of prose. *Visible Language*, Fall 1971, 5, 365-369. (IV-17)

Assesses the effect of amount of white space and readability on readers' preference and comprehension of a news story.

254. SMITH, KARL U.; SCHREMSER, ROBERT; & PUTZ, VERNON. Binocular coordination in reading. *Journal of Applied Psychology*, June 1971, 55, 251-258. (IV-1)

Uses real-time laboratory computer methods to determine the time differences between the two eyes in reading for three subjects, each having 18 trials.

255. SMITH, RICHARD J.; JENSEN, KENNETH M.; & DILLINGOFSKI, MARY SUE. The effects of integrating reading and writing on

four variables. *Research in the Teaching of English*, Fall 1971, 5, 179-189. (IV-7)

Investigates the effect of integrating reading and writing tasks on the attitudes, recall ability, and ability to identify the main idea of 436 fourth graders.

256. SMYTHE, P. G.; HARDY, MADELINE; STENNETT, R. G.; & WILSON, H. R. Developmental patterns in elemental reading skills: phoneme discrimination. *Alberta Journal of Educational Research*, March 1972, *18*, 59-67. (IV-6)

Develops a test of the ability of 104 children of grades one through four to discriminate phonemes, and reports results.

257. SMYTHE, P. C.; STENNETT, R. G.; HARDY, MADELINE; & WILSON, H. R. Developmental patterns in elemental skills: knowledge of upper-case and lower-case letter names. *Journal of Reading Behavior*, Summer 1970-71, 3 (3), 24-33. (IV-5)

Assesses the ability of 200 children, kindergarten through grades three, to identify upper- and lowercase letter names. Determines the relationship of this knowledge to visual discrimination and notes developmental growth trends.

258. SMYTHE, P. C.; STENNETT, R. G.; HARDY, MADELINE; & WILSON, H. R. Developmental patterns in elemental reading skills: visual discrimination of primary-type upper-case and lower-case letters. *Journal of Reading Behavior*, Fall 1970-71, 3, (4) 6-13. (IV-5)

Employs 200 pupils, kindergarten through grade three, in studying the development of the ability to discriminate upper- and lowercase letters of the alphabet.

259. SODERBERGH, RAGNHILD. *Reading in early childhood: a linguistic study of a Swedish preschool child's gradual acquisition of reading ability*. Stockholm: Almquist and Wiksell, 1971. (IV-7)

Follows one girl from age two years, four months to three years, five months as she learns to read. Stages of learning are identified and described.

260. SPERLING, GEORGE. Short-term memory, long-term memory, and scanning in the processing of visual information. In F. A. Young & D. B. Lindsley (Eds.) *Early experience and visual information processing in perceptual and reading disorders*. Washington, D. C.: National Academy of Sciences, 1970. Pp. 198-215. (IV-5)

Proposes a model of visual-information processing from an array of letters. Information from 18 sources is used in the development of the model.

261. SPERRY, ROGER W. Cerebral dominance in perception. In F. A. Young & D. B. Lindsley (Eds.) *Early experience and visual information processing in perceptual and reading disorders.* Washington, D. C.: National Academy of Sciences, 1970. Pp. 167-177. (IV-1)

Details a case study of one patient diagnosed to have complete agenesis of the corpus callosum and cites other research and writing in discussing the effect of congenital absence of the corpus callosum on visual perception.

262. SPRIGLE, HERBERT A. Can poverty children live on "Sesame Street"? *Young Children*, March 1971, 25, 202-216. (V-4)

Ascertains whether *Sesame Street* can prepare disadvantaged children for first grade and narrow the gap between advantaged and disadvantaged children. Twenty-four pairs of disadvantaged Head Start kindergarten children were subjects.

263. STARCK, KENNETH. Campus press performance in coverage of disorders. *Journalism Quarterly*, Winter 1971, 48, 751-755. (III-2)

Studies the content of the Southern Illinois University student newspaper during the campus disorders of May, 1970. Also interviews staff members and information sources about the news coverage.

264. STEFFLRE, BUFORD. Run, mama, run: women workers in elementary readers. *Vocational Guidance Quarterly*, December 1969, *18*, 99-102. (III-2)

Analyzes the role of women workers in six basal reading series and compares the roles portrayed in the readers with that in the actual labor market.

265. STEINFELD, GEORGE J. & GREAVES, SALLY. The effects of retinal orientation on word recognition. *Journal of General Psychology*, October 1971, 85, 245-257. (IV-17)

Studies the effect of retinal orientation, word type, word length, and response indicator on the word recognition of 48 adults.

266. SWALM, JAMES E. A comparison of oral reading, silent reading and listening comprehension. *Education*, April-May 1972, 92 (4), 111-115. (V-5)

Divides 324 children at grades two, three, and four into three groups per grade and compares the effectiveness of oral reading, silent reading, and listening as instructional techniques for comprehending one story.

267. SWARTZ, KARYL & HALL, ALFRED E. Development of relational concepts and word definition in children five through eleven. *Child Development*, March 1972, 43, 239-244. (IV-8)

Compares the development of the relational concepts of right-left discrimination and of kinship to the levels of definitions given among 20 children, at each of four age levels (5, 7, 9, and 11).

268. SYKES, KIM C. A comparison of the effectiveness of standard print and large print in facilitating the reading skills of visually impaired students. *Education of the Visually Handicapped*, December 1971, 3, 97-105. (VI)

Analyzes whether standard print is less, equally, or more effective than large print for 41 visually impaired eighth- through twelfth-grade students ages 13 to 21.

269. SYMMES, JEAN S. & RAPOPORT, JUDITH L. Unexpected reading failure. *American Journal of Orthopsychiatry*, January 1972, 42, 82-91. (IV-12).

Studied 54 children retarded in reading with no known etiology to identify patterns of perceptual functioning.

270. THAMES, KENNETH H. & ROSSITER, CHARLES M., JR. The effects of reading practice with compressed speech on reading rate and listening comprehension. *AV Communication Review*, Spring 1972, 20, 35-42. (IV-7)

Determines whether high school sophomores practicing reading using compressed speech as a pacer would show greater gains in reading rate and listening ability than would a control group.

271. TODD, WILLIAM B. & KESSLER, CLEMM C., III. Influence of response mode, sex, reading ability, and level of difficulty on four measures of recall of meaningful written material. *Journal of Educational Psychology*, June 1971, 62, 229-234. (IV-4)

Analyzes the results of 180 college students on four measures of word recall according to the difficulty level of the material, sex, and reading ability of the subject, and whether the passage was just read, read and underlined, or read with additional notes taken.

272. TRACHTMAN, JOSEPH N. The visual environment of the classroom and learning. *Optometric Weekly*, February 3, 1972, 63, 106-110. (I)

Summarizes research dealing with vision and illumination with special emphasis on classroom lighting.

273 TRIBBLE, GLORIA. Research and word development skills. *Ohio Reading Teacher*, Fall 1971, 6 (1), 3-4. (I)

Summarizes several studies concerning the method of teaching initial word recognition in beginning reading.

274. TUINMAN, J. JAAP. Assessment of the acquisition of information from reading prose passages. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 198-205. (V-11)

Compares three test development strategies for their ability to assess acquisition of information from prose passages. The subjects were 265 seventh-, eighth-, and ninth-graders.

275. TUINMAN, J. JAAP. The relationships among cloze, associational fluency, and the removal of information procedure—a validity study. *Educational and Psychological Measurement*, Summer 1972, 32, 469-472. (IV-17)

Explores relationships of cloze test and removal of information performance (RIP) to associational fluency by asking 45 graduate students to complete a RIP task then a cloze task.

276. TUINMAN, J. JAAP. The removal of information procedure (RIP). *Journal of Reading Behavior*, Spring 1970-71, 3 (2), 44-50. (IV-17)

Describes a reversed cloze procedure on removal of information for a measure of comprehension in a study of 530 junior high and 100 college students.

277. TUINMAN, JAAP & HAFNER, LAWRENCE E. Information value of adjectives in relation to their position in sentences. *Psychological Reports*, June 1971, 28, 987-990. (IV-7)

Tests the hypothesis that the position of the adjective in a sentence would not affect its information value. Uses 90 college sophomores and juniors in a reading course.

278. TURNER, E. W. The effect of long summer holidays on children's literacy. *Educational Research*, June 1972, 14, 182-186. (III-6)

Assesses language facility and reading ability of 83 children from a municipal housing project and 143 from privately owned homes near the project to determine what effects their en-

vironments might have on their reading ability after a summer vacation.

279. TUTTLE, DEAN W. A comparison of three reading media for the blind. *Education of the Visually Handicapped*, May 1972, 4, 40-44. (VI)

Assesses comprehension of 104 Braille readers, ages 14-21, on three equivalent forms of a reading test: one in Braille, one in normal recording, and a third in compressed speech.

280. UNGARO, DANIEL. Split VU reading readiness. *Elementary English*, October 1971, 48, 632-636. (V-4)

Reports on the expansion of the Split Vu reading program to a readiness class of 26 culturally deprived children.

281. VASQUEZ, ARTURO S.; MARTINEZ, GREGORIO V.; & POWERS, RICHARD D. Circulars for informing poorly literate farmers. *Journalism Quarterly*, Fall 1971, 48, 535-538. (III-12)

Presents results of a survey of 100 Mexican farmers to determine their use and understanding of information circulars.

282. VINYARD, DALE & SIGEL, ROBERTA S. Newspapers and urban voters. *Journalism Quarterly*, Fall 1971, 48, 486-493. (III-1)

Samples by interview 250 registered voters in one city to determine what political use the newspaper has for the reader.

283. VUKELICH, CAROL & BEATTIE, IAN. Teaching reading in the kindergarten: a review of recent studies. *Childhood Education*, March 1972, 48, 327-329. (I)

Discusses the recent research studies related to the reading achievement of kindergarten children. The studies are divided into two categories: 1) prereading achievement with reading readiness workbooks and 2) planned reading sessions.

284. WADSWORTH, H. G. A motivational approach toward the remediation of learning disabled boys. *Exceptional Children*, September 1971, 38, 33-42. (V-10)

Compares the effects of various tutoring approaches on the reading level and social behavior of 10 third-grade boys.

285. WAITE, RICHARD R. Black and white families in a multiethnic urban primer. In Sara Goodman Zimet (Ed.) *What children read in school*. New York: Grune & Stratton, 1972. Pp. 55-69. (III-2)

Analyzes and compares the roles of a black boy and a white boy and their fathers in a series of first grade reading materials. In particular, the masculine adequacy of each is studied.

286. WATKINS, BARBARA A. Using programmed material to teach young children phonics. *Reading*, June 1971, 5 (2), 22-27. (V-5)

Evaluates a programed kit developed to teach phonic skills by collecting letter sound knowledge skills from five matched pairs of British five year olds who had received nine weeks of instruction under either a programed or a non-programed approach.

287. WATTS, GRAEME H. & ANDERSON, RICHARD C. Effects of three types of inserted questions on learning from prose. *Journal of Educational Psychology*, October 1971, 62, 387-394. (IV-9)

Investigates the effects on 300 high school seniors of inserted questions which require application of what has been read to a new situation versus a repeated example or a name.

288. WEAVER, WENDELL W. & KINGSTON, ALBERT J. Oral and oral-written language measures with first-grade pupils. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 219-226. (V-11)

Describes methods of assessment of oral and oral-written language ability of 102 first graders and treats problems in school research.

289. WEAVER, WENDELL W.; KINGSTON, ALBERT J.; & DINNAN, JAMES A. Vertical and horizontal constraints in the context reading of sentences. *Journal of Reading Behavior*, Spring 1970-71, 3 (2), 39-43. (IV-11)

Identifies the use of vertical and horizontal constraints in sentence context in a study of words supplied in deletions by 40 college women.

290. WEBER, ROSE-MARIE. First-graders' use of grammatical context in reading. In Harry Levin & Joanna P. Williams (Eds.) *Basic studies in reading*. New York: Basic Books, 1970. Pp. 147-163. (IV-7)

Collects and analyzes oral reading errors of two classes of children (N=45) to determine how grammatical competence is brought to bear on the reading task.

291. WEINTRAUB, SAMUEL; ROBINSON, HELEN M.; SMITH, HELEN K.; & PLESSAS, GUS P. Summary of investigations relating to reading, July 1, 1970 to June 30, 1971. *Reading Research Quarterly*, Winter 1972, 7, 213-393. (I)

Summarizes and annotates 307 studies in reading classified under six major headings: summaries of specific aspects of

reading research, teacher preparation and practice, sociology of reading, physiology and psychology of reading, the teaching of reading, and reading of atypical learners.

292. WEITZMAN, LENORE J.; EIFLER, DEBORAH; HOKADA, ELIZABETH; & ROSS, CATHERINE. Sex-role socialization in picture books for preschool children. *American Journal of Sociology*, May 1972, 77, 1125-1150. (III-2)

Investigates picture books which have received Caldecott awards during the past five years and other books which are popular with children; and reports frequency of appearance of female characters, activities of boys and girls, and adult role models, both male and female.

293. WHITE, MURRAY J. Visual hemifield differences in the perception of letters and contour orientation. *Canadian Journal of Psychology*, June, 1971, 25, 207-211. (IV-1)

Uses ten and eight subjects respectively in two experiments which were performed to compare recognition of capital English letters with thin lines presented at four angles; each target appeared three degrees to the left or to the right of a fixation point.

294. WHITING, GORDON C. & STANFIELD, J. DAVID. Mass media use and opportunity structure in rural Brazil. *Public Opinion Quarterly*, Spring 1972, 36, 56-68. (III-1)

Presents data from a survey of 18 communities in Brazil to determine if restricted opportunity structures are associated with escapist or instrumental usage of radio and magazines.

295. WIEDERHOLT, J. LEE & HAMMILL, DONALD D. Use of the Frostig-Horne Visual Perception Program in the urban school. *Psychology in the Schools*, July 1971, 8, 268-274. (V-4)

Examines the effect on reading of the Frostig training program with 170 kindergarten and first-grade subjects.

296. WILLIAMS, FREDERICK & LINDSAY, HOWARD. Ethnic and social class differences in communication habits and attitudes. *Journalism Quarterly*, Winter 1971, 48, 672-678. (III-1)

Surveys the three audiences of a poverty newsletter—clients, social workers, and community leaders—for habits and attitudes toward the newsletter and toward the general media. A random sample of 198 readers was used.

297. WILLIAMS, JOANNA P. Some experiments on visual and aural word recognition. In Frank P. Greene (Ed.) Reading: the right to participate. *Twentieth Yearbook of the National Reading Conference*, 1971. Pp. 78-84. (I)

Reports several laboratory experiments on visual and aural word recognition using kindergarteners, first graders and adults as subjects.

298. WILLIS, JERRY W.; MORRIS, BETTY; & CROWDER, JEANE. A remedial reading technique for disabled readers that employs students as behavioral engineers. *Psychology in the schools*, January 1972, *9*, 67-70. (V-10)

Evaluates an attempt to develop an effective and inexpensive approach to deal with reading problems according to interests, rewards, daily collection of data, and systematic reward and supervision using 10 fourth-grade inner city students ages 9.8 to 11.8 with serious reading problems.

299. WINETT, RICHARD A.; RICHARDS, C. STEVEN; & KRASNER, LEONARD. Child-monitored token reading program. *Psychology in the Schools*, July 1971, *8*, 259-262. (V-5)

Assesses the effect of a token economy on the reading performance of five second graders designated as target subjects in a class of 25.

300. WINOGRAD, EUGENE & CONN, CHARLES PAUL. Evidence from recognition memory for specific encoding of unmodified homographs. *Journal of Verbal Learning and Verbal Behavior*, December 1971, *10*, 702-706. (IV-8)

Studies, in two experiments using 115 undergraduates, their abilities to recall homographic nouns earlier seen in a relatively familiar or an unfamiliar context.

301. WONG, MARTIN R. Integrative reconciliation in meaningful verbal learning. *Cognitive Psychology*, July 1971, *2*, 325-329. (IV-9)

Tests the theoretical concept of integrative reconciliation by randomly assigning 84 college juniors to one of three treatments of an essay: 1) basic core, 2) basic core with prompts, and 3) basic core with direct comparisons to a previously read essay.

302. ZDEP, STANLEY M. Educating disadvantaged urban children in suburban schools: an evaluation. *Journal of Applied Social Psychology*, April-June 1971, *1*, 173-186. (V-5)

Dicusses the effect of a one-year experimental program involving 38 "volunteer" disadvantaged first- and second-grade children who were bussed daily to a surburban school; comparisons are made with their counterparts who remained at the inner city school. Tests the difference in their reading ability, math, and listening skills.